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Can You Hear Us Now? Investigating the Effects of a Wireless Grid Social Radio Station on Collaboration and Communication in Fragile Populations

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ABSTRACT

The ability to interact with peers and coworkers in online digital networks is essential in learning and business environments. Our digital participatory culture is based on communication in response to purposeful activity and is facilitated by information and communication technologies (ICT). Students with emotional, behavioral, and learning disabilities are often disengaged and excluded from this knowledge-building conversation. This disengagement results in a cycle of failure exhibited through diminished self-efficacy and inadequate academic and emotional self-regulation. A critical goal of those who work with these students is to bolster their resilience, persistence, participatory, and communicative skills—to invite them back into the conversation.

This research study investigated the potential for wireless grids technologies to serve as a viable infrastructure for students in a therapeutic high school setting to participate in digital social networks. Using social cognitive theory as a theoretical framework and activity theory as a conceptual framework, this study specifically investigated how a wireless grids implementation of the WeJay Social Radio Edgeware Gridlet was used to positively impact perceived self-efficacy and academic and emotional self-regulation associated with written and oral communication. This study also investigated how a digital networked environment could extend and enhance current methods used by school staff and programs to address cognitive, emotional, and behavioral issues affecting student socialization and learning in a therapeutic high school setting.

The supports, resources, and opportunities for collaboration and socialization in the networked environment of the research space proved motivating for students and staff, and fostered academic, emotional, and behavioral self-regulation and positive self-efficacy for

written and oral communications as evidenced by the artifacts and radio shows produced by students. Furthermore, students and staff participants expressed their interest in continuing to use WeJay. The outcomes of this research study suggest that informal, interest-based learning should take place in school. For some students, school is the only place they will have access to the technology and supports required to engage in powerful informal learning experiences. For fragile populations, these experiences may provide opportunities for success that have eluded students in formal, teacher-directed, curriculum-driven educational settings.

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by

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CHAPTER ONE: INTRODUCTION

> *Every child enters the classroom in a vehicle propelled by that child alone, at a particular pace and for a particular purpose. Here is where the fair study of children begins and where teaching becomes a moral act. (Robert Coles in Paley, 1991, p. xii)*

Statement of the Problem

This research study investigated the potential for wireless grids technologies to serve as a viable infrastructure for students with emotional, behavioral, and learning disabilities to participate in digital social networks. This study specifically investigated how a digital networked environment may be used to positively impact perceived self-efficacy and academic and emotional self-regulation associated with written and oral communication. This study also sought to understand how a digital networked environment might be used to extend and enhance current methods used by school staff and programs to address cognitive, emotional, and behavioral issues affecting student socialization and learning in a therapeutic high school setting. The wireless grids social networking implementation for this study, a private social radio station, was designed to motivate and engage students in inquiry-based research across the curriculum.

The ability to interact with peers and co-workers in online digital networks is essential in learning and business environments. Our digital participatory culture is based on communication in response to purposeful "activity" and is facilitated by information and communication technologies (ICT). Lankes (2011) argues that knowledge is created through conversation—internal and with others. Students with emotional, behavioral, and learning disabilities are often disengaged and excluded from this knowledge-building "conversation". This disengagement results in a "cycle of failure" exhibited through diminished self-efficacy and academic and emotional self-regulation (Bandura, 1986, 1997). A critical goal of those who work with these

students is to bolster their resilience, persistence, and participatory and communicative skills—to invite them back into the conversation. Buzzanell (2010, p. 6) considers processes that support resilience. She found social capital[1] to be essential at both the individual and organizational level and suggests that maintenance and use of communication networks can support social capital. Social networking systems present opportunities for teachers to model social skills, facilitate peer collaboration, provide access to high-quality content, and enlist input from experts in the field.

Landscape & Communicative Competencies

Recent studies (Jenkins, 2009; Morgan, 2010) identify gaps in research related to student participation in social networking environments, delineate potential benefits of social network participation, and acknowledge the importance of providing social skills training that addresses behavioral, communicative, and participatory skills required for appropriate interaction in networked digital environments. A study by Yu et al. (2010, p. 1494) indicates that there is little research related to pedagogical and behavioral issues associated with student participation in social networks. Their study found that online social networking influenced student learning outcomes, social acceptance, and acclimation to university culture.

Students live, work, play, and learn in a technology-pervasive world. Smart mobile devices provide anywhere, anytime, always-on connectivity to people and information as well as opportunities to co-create and distribute information in multiple formats. Students spend significant amounts of time participating in social networks, multi-user gaming platforms, and virtual reality environments—the playgrounds and neighborhoods of their world. The

[1] Intuitively, then, the basic idea of "social capital" is that one's family, friends, and associates constitute an important asset, one that can be called upon in a crisis, enjoyed for its own sake, and/or leveraged for material gain. (Woolcock, 2001:3)

Generations 2010 report issued by the Pew Internet & American Life Project found that 93% of teens aged 12–17 and 95% of millennials aged 18–33 engage in online activities. Of these, 73% of teens and 83% of millennials participate in social networking sites such as Facebook, Twitter, MySpace, and LinkedIn (Zickuhr, 2010). Wireless Internet married to mobile devices supports 24/7 access to social networks and online content. Instant messaging via these devices has become the constant contact preferred communication medium of teens. According to Pew's Social Media and Young Adults report of February 3, 2010, eight in ten adults between the ages of 18 and 29 (81%) are wireless Internet users (Lenhart, Purcell, Smith, Zickuhr, 2010). These statistics are occasionally bemoaned as proof of the distracting and disruptive influences that interfere with disciplined, deep, creative thought. Authors of recent popular literature highlight these concerns (Carr, 2010; Jackson, 2008; Richtel, 2010). Others focus on the potential of technology-enabled collaboration to positively influence personal learning and to tap into the "cognitive capacity" of groups to solve problems, as critical conversations regarding education, healthcare, the environment, government, economics, etc., are taking place in networked digital social forums.

A MacArthur Foundation report authored by Jenkins et al. (2009) suggests that teens operate in a "participatory culture" with low barriers to artistic expression and civic engagement. The authors further note that such a culture is amenable to informal mentorship, supportive feedback, and feelings of connectedness to one's online community. George Siemens, in one of his many blog posts on "connectivism," argues that critical societal issues such as global warming, poverty, etc., should be tackled using our collective cognitive capacity (Siemens, 2010). Clay Shirky continues Siemens' argument in his book, *Cognitive Surplus: Creativity and Generosity in a Connected Age* (2010) and in a recent essay, *The Political Power of Social*

Media, which lauds the power of collective action made possible via a technological backbone which shares the voice of a networked population (Shirky, 2011). While the opportunity to form these social connections and collaborations to address critical issues is possible if we are willing to participate outside of our cultural comfort zones, Danah Boyd, in a Web 2.0 Expo talk (2009), reminds us that technology does not "inherently disintegrate social divisions" and that those who seek out diversity should be "highly valued in society." *Harvard Business Review* (July/August 2011) asks, "Are you a collaborative leader?" noting that that "Facebook, Twitter, LinkedIn, videoconferencing, and a host of other technologies have put connectivity on steroids and enabled new forms of collaboration that would have been impossible a short while ago" (p. 70). John Abele's article in the same issue, "Bringing Minds Together," considers medical advances such as the balloon catheter in suggesting that breakthroughs are being achieved as a result of collaboration rather than by individuals working in isolation (pp. 90-91). Participatory and communicative competencies allow individuals to engage productively in these collaboratives. Emerging technologies, notably wireless grid implementations of ad hoc networks, support anytime, anywhere communications, facilitating these types of collaborations.

> *In a world where increasingly high degrees of literate participation are needed by citizens of all nations, advancing the communicative competence of all, making available the genres of power and cooperation, is a matter of social capacity and social justice. (Bazerman, Bonini, & Figueiredo, 2009, p. xiv)*

Schools are challenged to provide instruction and contextual learning opportunities for students to become respectful, socially adept, and technologically skilled participants in digital environments. We can help students to develop respectful open-mindedness to diverse opinions and ideas. Engaging in current and emerging digital landscapes requires competencies in the use

of digital media and technologies that facilitate individual and collaborative opportunities for information discovery, multi-format creation, and communication of content.

Participatory competencies are skills required to engage as a contributor. *Social competencies* are the behaviors expected of participants who engage and contribute. When we engage in "inquiry" we may reach out to experts to solicit input and participation in our personal quests. We may also join a group that is engaged in inquiry in order to contribute to the conversation. These communicative exchanges require an understanding of group dynamics and confidence in our ability to contribute to the exchange.

An occasional paper published by the MacArthur Foundation (2006, p. 3) suggests that schools have been "slow to react to the emergence of this new participatory culture" and related elements of "cultural competencies" and "social skills" which students require to navigate the "new media landscape."

Morgan (2010, p. 147) argues that "For students with emotional and behavioral disorders to access the academic and social benefits of social networking Web sites, it is important that the skills for these new environments be taught to them."

Social networks support individual interests and accommodate the introduction of topics that have the potential to incite and motivate curiosity and interest at the group level. They can also become networks for powerful social and political advocacy. Information seeking, communication, and personal and collaborative knowledge goals are supported and sustained as we develop our personal and professional learning networks both offline and online through digital technologies. Requisite social skills allow us to actively and appropriately engage in these participatory cultures. While schools have the potential to provide learning opportunities which address competencies and habits of mind associated with these collaborative environments,

keeping up with and providing access to technologies and networks most amenable to practical application and practice present a challenge.

The New York State Department of Education requires districts to develop policies for safe use of the Internet. “Acceptable Use Policies (AUP) in school districts define guidelines and principles for the use of Internet, Web-based products, and computer access provided by school districts” (New York State Department of Education). These policies ensure compliance with the Children's Internet Protection Act (CIPA), which is required to access federal E-rate funding. Social networking platforms that students access after school hours—Facebook, MySpace, YouTube—are blocked in most schools as part of this compliance.

Recent research considers social networking technologies in terms of barriers, challenges, and benefits associated with integration of such networked environments to support learning and emotional and intellectual socialization. For example, Notley (2008), an Australian researcher, questioning bans on social networking in schools, considers the positive socialization and learning outcomes associated with participation in them. He refers to Woolcock (2001), whose “international research has shown that higher levels of social capital are associated with better health, higher educational achievement, better employment outcomes and lower crime rates” (Notley, 2008, p. 6).

Yu et al. (2010, p. 1501), using Facebook as the context for their study, considered the impact of online social networking on social learning outcomes for university students, suggesting that their study “offers a new approach for educational institutions to acknowledge peer influence, namely providing a supportive infrastructure in which social networking activities can take place to increase interactions among students.”

WeJay, a Social Radio Edgeware Gridlet

This research examined the potential of wireless grids technology, specifically the Wireless Grids Innovation Testbed (WiGiT), to provide a safe learning and instructional environment in which students can participate in a social networking system. The wireless grids platform allows users to create their own ad hoc, private network of personal devices without a dedicated server. "The purpose of WiGiT (**Wi**reless **G**rids **I**nnovation **T**estbed), according to the Syracuse University project leader Lee McKnight, is to refine open specifications for a wireless grid standard, and create a stable platform for experimentation" (Boon, 2010). WiGiT development is funded by the National Science Foundation (NSF) as a collaborative effort of Syracuse University, Virginia Tech, MIT, Tufts University, and others. Participants and partners in the project include academic institutions, private sector organizations, and corporate partners. (http://wigit.ischool.syr.edu/).

WeJay, a Social Radio Edgeware Gridlet, presented at the Wireless Grids Consortium, May 2010, is a sophisticated application (gridlet) that can be implemented as part of the WiGiT framework. Radio shows are created by users and the playlist is populated by them and selected collaborators. Users can chat about each show, follow the activities of other users, and be updated on events related to their favorite shows and the activities of fellow WeJays.

The High School

For this study we implemented WeJay as a private, teacher-mediated social communications network in a therapeutic high school. In 2009–2010, a new special education administrative team created an entry plan that included academic rigor and technology advancement for the secondary programs. The conception of a therapeutic high school was brought forth with the goal of providing Boards of Cooperative Educational Services (BOCES)

students with high school experiences comparable to those of countywide high school students. The vision was to create a program rich in creative arts, music, and technology wherein students' strengths could be infused with their interests, thus maximizing their motivation and their potential to tackle a curriculum concomitant with their abilities. At the beginning of the 2010 school year, approximately 150 students were enrolled. The high school was established to serve students who needed a departmentalized secondary program. Many of the students' profiles reflected learning challenges and struggles in achieving a New York State Regents diploma. The high school emphasizes differentiated instruction and hands-on learning along with interventions that include individual and group therapy.

During 2011-12, the period for this study, the high school served approximately 129 special education students. The students ranged from 9th grade through 12th grade. All students required intensive academic and emotional support in order to access their education. The program provided for academic and vocational students to receive regent, advanced regent, IEP diplomas and local diplomas as follows: 13 students graduated from the program earning a regent diploma; 5 students earned an IEP diploma; 1 student earned an advanced regent diploma; 10 students earned a local diploma. A small contingency of students were not classified as special education but still needed the program supports to be successful. The breakdown of disabilities included:

- 80 students with emotional disabilities
- 12 students with learning disabilities
- 18 other health impaired students
- 8 students with autism
- 7 students with multiple disabilities
- 1 student with developmental disabilities
- 3 non-classified students

Theoretical Perspective

Today's adolescents face significant social and intellectual challenges as they navigate the path from middle school through high school. For some children physical, emotional, intellectual, and situational factors exacerbate these challenges. In some cases these factors necessitate alternative educational settings that provide support services, as well as creative and physical outlets, to meet the needs of students who struggle academically and socially. If engaging in the physical world isn't demanding enough, these students are further challenged to appropriately participate in digital information environments. It is critical that these students possess competencies to engage in information discovery, collaborative knowledge construction, content sharing, and socialization in the digital realm.

This research investigated the potential for a wireless grids technologies implementation of a private social radio station, WeJay, to serve as a viable platform for students to develop participatory and communications competencies with a focus on written and oral communications as they take on management roles and produce content associated with personal and group interests and in response to class assignments. The research also considered the efficacy of teachers, support staff, and fellow students to act as role models and mentors in supporting these competencies, perceived self-efficacy, and self-regulation.

The theoretical perspective for this study considers positive perceptions of self-efficacy in concert with academic and behavioral self-regulation to be essential for positive engagement in domain-specific endeavors, writing and oral communication, and productive engagement in collaborative environments. These constructs are central to Albert Bandura's conception of social cognitive theory. The WeJay Social Radio Edgeware Gridlet provides a real-world platform for developing and measuring these perceptions, behaviors, and skills.

Social Cognitive Theory

Bandura's 1986 publication *Social Foundations of Thought and Action: A Social Cognitive Theory* recognized the roles of cognition, self-regulation, observational learning, and self-beliefs (an overarching concept that incorporates self-efficacy) as determinants of both individual and collective behavior. Through social cognitive theory, Bandura extended his 1960s work on Social Learning Theory to include what he considered to be the critical missing construct of self-beliefs. In 1977, he published his seminal work, *Self-Efficacy: Toward a Unifying Theory of Behavioral Change*, in which he suggests that cognitive processes are invoked as we observe others, conceptualize what we observe, and construct symbolic models that can be recalled to affect action when we are presented with similar tasks. Feedback in the form of social persuasions, verbal judgments, and consequences resulting from our actions, as well as our experiences of emotional and physical sensations, affect our self-efficacy beliefs and influence our feelings of competence and our motivation to tackle tasks and self-regulate our behaviors to accomplish our goals.

Associated with our actions, then, are *outcome expectancies* and *efficacy expectancies* (Bandura, 1977, 1986; Schunk & Pajares, 2005). "An outcome expectancy is defined as a person's estimate that a given behavior will lead to certain outcomes. An efficacy expectation is the conviction that one can successfully execute the behavior required to produce the outcomes" (Bandura, 1977, p. 193). This action, feedback, expectation, and efficacy cycle is the basis for Bandura's 1986 construct, *reciprocal determinism,* which recognizes: (1) personal factors associated with cognition, affect, and biological events, (2) behavior, and (3) environmental influences. These factors interact to influence human functioning and are conceptualized by Bandura as a *triadic reciprocality.*

Bandura (1977, p. 195) outlines conditions and interventions which target four sources of information that influence expectations of mastery: performance accomplishments (a research paper), vicarious experience (an exemplar research paper completed by a fellow student), verbal persuasion (positive or negative comments from a teacher), and physiological states (anxiety associated with writing a research paper). Bandura also recognized the construct of self-regulation as a necessary process for the achievement of learning goals. Feelings of self-efficacy in the absence of self-regulation are unlikely to lead to desired learning outcomes. Self-regulated learners monitor and control their behaviors in order to complete individual and collaborative academic tasks. Self-regulation of behavior during individual and collaborative learning processes supports individual and group self-efficacy (Bandura 1977, 1986; Zimmerman, 2000; Pintrich, 2001).

Social cognitive theory is relevant to this study because it addresses critical factors associated with academic success and social adjustment—perceived self-efficacy and academic and behavioral self-regulation. Perceived self-efficacy is diminished as a result of academic failure. Academic and behavioral self-regulation are particularly challenging for students with emotional, behavioral, developmental, and cognitive challenges. Concomitant with today's thinking and debates associated with educational policy and learning, Albert Bandura (1997) pointed to those who believed that schools failed to support a segment of the population that struggled in traditional settings:

> *Not only does it [school] fail to prepare the youth adequately for the future, but all too often it undermines the very sense of personal efficacy needed for continued self-development. Recurring difficulties encountered with low achieving students erode teachers' sense of instructional efficacy. . . . Inefficacy feeds on itself. (p. 175)*

Research studies related to individual and collective self-efficacy and self-regulation have been undertaken in various domains including health, education, and business. The present study investigated how a wireless grids social radio station may be used to positively impact perceived self-efficacy and academic and behavioral self-regulation associated with written and oral communication. It further sought to understand how such an environment could be used to extend and enhance methods used by school staff and programs to address cognitive, emotional, and behavioral issues affecting student socialization and learning in a therapeutic high school setting.

Activity Theory

Activity theory provides a conceptual framework to visually document and monitor the roles, goals, relationships, and socialization processes associated with running the radio station. Activity theory considers individuals to be "fully cognizant human actors with self-generated agendas" (Nardi, 1996, p. 88). This view is concomitant with social cognitive theory, which considers individuals to be self-organizing, proactive, and self-regulating rather than reactive organisms (Bandura, 1986). Specifically relevant to this study is the argument that social and technological innovations influence behavior and innovations, which "in turn, create new selection pressures for the evolution of specialized biological systems for functional consciousness, thought, language, and symbolic communication" (Bussey & Bandura, 1999, p. 683). Activity theory seeks to model the contextual relationships of these social and technological factors.

Research Questions

This research study investigated the overarching research question*: Does a wireless grids implementation of a social radio station in a therapeutic high school setting support the*

development of perceived self-efficacy and self-regulation associated with written and oral communication skills?

This research study investigated the following specific research questions. As students engage as managers and contributors to the WeJay Social Radio Edgeware Gridlet, does interaction in the networked environment support the development of students':

a. Perceived self-efficacy associated with written and oral communication?

b. Academic self-regulation associated with written and oral communication?

c. Emotional self-regulation associated with written and oral communication?

These questions were addressed using a quasi-experimental one-group pretest-posttest within-participants design. The study employed quantitative and qualitative methods to collect data pretreatment, midway through the treatment, and following the treatment. *The Method Flow Diagram*, Appendix D, visually describes the relationship, timing and context for execution of the data collection associated with this mixed-method study. An in-depth review of the methodology for this study is provided in Chapter 3.

Purpose of the Study

The purpose of this study was to investigate the potential for wireless grids technologies in the form of a student-run social radio station to serve as a viable learning platform for students with emotional, behavioral, and learning disabilities to participate in digital social networks. This study specifically investigated how a networked digital environment could be used to positively impact perceived self-efficacy and academic and emotional self-regulation associated with written and oral communication. The study was conducted in a Board of Cooperative Educational Services (BOCES) therapeutic high school setting.

The study provided an environment for staff to extend and enhance current methods used to address cognitive, emotional, and behavioral issues affecting student socialization and learning. A primary focus was enhancing student perceptions of self-efficacy and development of self-regulated learning and self-regulated behavior associated with writing and oral communications as they engaged in producing radio shows. The teachers took on the role of program manager for the radio station. They defined the format of the station—programs to be presented, scheduled, and promoted. They also reviewed and provided feedback on student submissions (topic viability, editing required, etc.) before work was accepted for broadcast. Students engaged in self-selected and curricular inquiry-based research, working individually and collectively to produce radio shows comprised of interviews, newscasts, student-composed music, public service announcements, and advertisements. The shows were produced for broadcast within the high school, with the extended BOCES community, and with family members. Radio shows were uploaded to SoundCloud (http://soundcloud.com/information-connections/) to provide web-based, persistent access to completed shows. Throughout the project, student names were replaced with station mascot names (e.g., Hawk01) to ensure the anonymity and privacy of student participants.

Significance of the Study

This study was significant because it addressed gaps in the literature, took place in a therapeutic high school setting, applied innovative wireless grids social-radio technology, and employed a robust model to address the research questions. There is little research related to pedagogical and behavioral issues associated with student participation in social networks (Yu et al., 2010; MacArthur Foundation, 2006). In New York State, schools must comply with educational law, which requires blocking of sites that include sexually explicit content. Public

social-networking sites such as Facebook, Twitter, and MySpace are among these sites. The research context for this study overcomes the public-space concerns by providing a cutting-edge technological option for hosting a school-based, private, moderated social networking platform.

We know that students with emotional, behavioral, and learning issues face significant challenges both socially and cognitively. Teachers and support staff who work in therapeutic high school settings monitor student behavior to determine what supports are needed. Appropriate social skills are modeled and reinforced throughout the day. Participation in online environments poses new social challenges requiring special skills and conventions. Students must have opportunities to engage participatory and social skills in the context of these environments. This study provides a safe context in which staff can extend and enhance current methods of support.

The research design for this study uses a conceptual framework which provides a robust model, activity theory, to investigate multiple points of interaction among individuals, groups, and technologies. Data collection and analysis investigated how social interaction in the context of a social radio platform influenced perceived self-efficacy, motivation, self-regulation, as well as participatory, social, and communicative competencies with a specific focus on written and oral communications. Using the model in this way may contribute to an enrichment of perspectives offered by the theoretical framework and as such, could make a significant contribution to the literature. This research also constituted an implementation of wireless grids technologies, providing an opportunity for evaluation and assessment with regard to testing and validation in a specialized learning context.

In summary, a background and introduction to this research study is provided in support of the overarching research question—*Does a wireless grids implementation of a social radio*

station in a therapeutic high school setting support the development of perceived self-efficacy and self-regulation associated with written and oral communication skills?—through an overview of the landscape of a digital social networking environment and associated communicative competencies. Particular focus was given to research gaps related to student participation in digital social networking environments and to the range of issues identified as barriers to these environments.

An overview of wireless grids technology, in the form of WeJay, a Social Radio Edgeware Gridlet, is provided together with a discussion of how this application may be examined for the potential to offer a viable solution for student participation in digital social networking environments and to enhance and extend current practices of supporting students in their academic endeavors and social interactions.

A unique therapeutic high school environment, the setting for this study, is described. WeJay is evaluated in this context to determine its potential to influence self-efficacy and self-regulation of writing and oral communications for students who are emotionally, behaviorally, and cognitively challenged.

The rationale for using Bandura's social cognitive theory as a basis for the study of cognitive processes, self-efficacy, and self-regulation in collaborative digital social networking environments is provided. The eight-step activity theory model is discussed as the conceptual framework which shows how individuals interact with each other and with technology in particular contexts. Activity theory visually frames the abstract concepts of social cognitive theory in a way that illustrates to everyone involved (staff, teachers, students, researchers) the roles, goals, relationships, social processes, and tasks related to this study. The quasi-experimental research design for this study is described and is intended to investigate multiple

points of interaction among individuals, groups, and technologies as they influence the constructs under consideration: self-efficacy, self-regulation, task value, and motivation in the domain of communicative competencies.

Through a review of the literature, Chapter 2 details the theoretical and conceptual frameworks for this study and considers the particular needs of students enrolled in a therapeutic high school setting. The study focuses on the constructs of self-efficacy, self-regulation, task value and motivation as they relate to written, oral, and collaborative activities in the context of a wireless grids implementation of WeJay, a social radio station. The activity theory conceptual framework will provide a lens to study the mediating influence of technology and the efficacy of teachers, support staff, and peers as role models and mentors in supporting communicative competencies, perceived self-efficacy, and self-regulation.

CHAPTER TWO: LITERATURE REVIEW

In the previous chapter an introduction to this research study was provided identifying the challenges associated with communicative competencies, self-efficacy, self-regulation, and task value in digital social networking environments for a fragile high school student population. These challenges gave rise to the overarching research question—*Does a wireless grids implementation of a social radio station in a therapeutic high school setting support the development of perceived self-efficacy and self-regulation associated with written and oral communication skills?* In responding to this research question a theoretical perspective incorporating social cognitive theory and activity theory was proposed using an eight-step activity theory model as a framework within which to study a wireless grids implementation of a social radio station in a therapeutic high school setting.

An in-depth review of the literature on social cognitive theory, activity theory, and wireless grids is provided in this chapter, focusing on self-efficacy, self-regulation, task value and task engagement, and current technological landscapes.

Social Cognitive Theory

The historical roots of social cognitive theory can be traced to the work of Miller and Dollard (1941), whose publication *Social Learning and Imitation* considered learning in terms of reinforcement, punishment, extinction, and imitation of models. Their work sparked new thinking and conversation around the impetus and constructs associated with human behavior and learning. According to Pajares (2002), behaviorists considered individuals' actions and responses to be "linked directly to stimuli," they argued that "altering the rate of pre-existing behavior by reinforcement was portrayed as a process wherein responses were regulated by their

immediate consequences without requiring any conscious involvement of the responders" (Bandura, 1977, pp. 191–192).

While Miller and Dollard "rejected behaviorist notions of associationism" in proposing a theory of social learning, the theory did not consider "delayed and non-reinforced" imitation. In 1963, Bandura and Walters published *Social Learning and Personality Development*, which extended social learning theory to include the constructs of observational learning and vicarious reinforcement.

In 1977 Bandura published "Self-Efficacy: Toward a Unifying Theory of Behavioral Change". This publication identified what he considered to be a critical, missing piece of current theories of learning, the concept of self-beliefs[2]. Self-beliefs combined with a second unique capability of humans, self-reflection, are powerful motivators that influence current and future behaviors. Considered from a learning lens, Bandura notes that "Most human behavior is learned observationally through modeling: from observing others, one forms an idea of how new behaviors are performed, and on later occasions this coded information serves as a guide for action" (p. 22). In summary, personal experiences, verbal persuasion, vicarious experiences attained through observational learning (attention to modeling by others), and emotional states or physiological arousal influence our self-beliefs and subsequent actions. This type of observational learning has relevance for the current study of technology-mediated social networking environments.

Bandura (1981) considered personal interests to be motivators of learning, dispelling behaviorism as the sole source of human action (p. 586). He explored "proximal goal setting," a function of self-regulatory behavior, as a means of "cultivating competence, self-efficacy, and

[2] The concept of self-beliefs is considered an overarching construct that encompasses several measures—self-determination, locus of control, attributional style, self-efficacy, etc.

intrinsic interest." Proximal goals are short-term performance goals or sub-goals that are achieved as one works toward a final or distal goal.

By 1986, Bandura developed a comprehensive conception of learning that he outlined in his seminal publication, *Social Foundations of Thought and Action: A Social Cognitive Theory*. He defined human functioning in relation to cognitive, vicarious, self-reflecting, and self-regulatory processes, once again contradicting the behaviorist argument that humans are essentially reactive—directed by uncontrollable impulses and responses to external factors. Glanz et al., (2002, p. 169) outlined the key interrelated concepts of the social cognitive theory (Appendix A) described by Bandura (1977, 1986, 1989, 1999).

Bandura's conception of "reciprocal determinism" (triadic reciprocality) identified the interaction of personal, behavioral, and environmental influences (Bandura, 1986; Wood & Bandura 1989). Personal factors include cognition, affect, and biological events; behavioral and performance factors include successes, failures, and lessons learned; environmental factors include resources, barriers, and facilities.

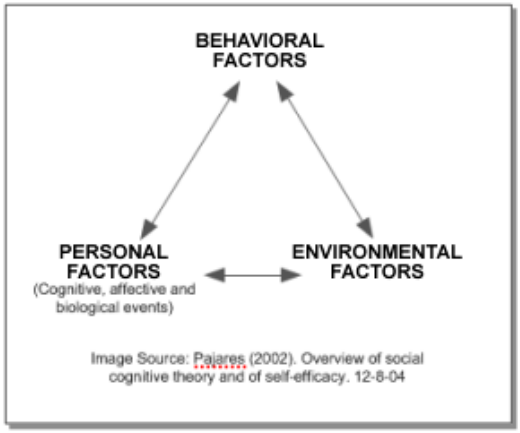


Figure 1: Reciprocal Determinism

This triadic representation belies the complexity of the theory, first because of the complexity of each of these factors and the relationships among them, and second because there are several other concepts that comprise the underpinnings of the theory. The diagram shows the bidirectional nature of the triadic components, recognizing that individuals are affected by and affect their environments. The diagram does not reflect the unequal influence each component contributes in varied contexts or the fact that individuals can act to modify their own

environments, which, in turn, influences both beliefs and outcomes—the crux of individual, personal agency. Pajares (2002) argues that by changing one or more of these components, teachers can improve students' self-beliefs.

> *Using social cognitive theory as a framework, teachers can work to improve their students' emotional states and to correct their faulty self-beliefs and habits of thinking (personal factors), improve their academic skills and self-regulatory practices (behavior), and alter the school and classroom structures that may work to undermine student success (environmental factors). (np)*

Based on the triadic reciprocality suggested by Bandura—the "interaction of personal, behavioral, and environmental influences"—and the argument of Pajares that students' self-beliefs can be affected by altering one or more of these components, this research considers the potential of a wireless grids implementation of a cognitive social radio proposed in this study to positively influence the learning environment to enhance communicative competencies.

Self-Efficacy

Self-efficacy is at the core, and is the most studied construct, of social cognitive theory. Bandura (1986, p. 391) defined self-efficacy beliefs as "people's judgments of their capabilities to organize and execute courses of action required to attain designated types of performances."

Self-efficacy has been used as a theoretical framework in numerous domains. In the area of learning, studies have considered academic achievement, attributions of success and failure, goal setting, social comparisons, memory, problem solving, career development, and teaching and teacher education. Study findings suggest self-efficacy to be a strong predictor of behavior. Bandura (1977) notes that self-efficacy in one area can generalize to other situations; nonetheless, these generalizations are most predictable where the task and setting are similar.

However, Chen, Gully, & Eden (2001, pp. 62–63), referring to Bandura (1986, 1997), argue that "most researchers have limited their research to the magnitude and strength dimensions, conceptualizing and studying self-efficacy as a task-specific or state-like construct," suggesting that measures of situational self-efficacy neglect the "trait-like" self-efficacy measures associated with general self-efficacy. General self-efficacy addresses individuals' perceptions regarding their ability to successfully tackle tasks across domains in varied situations and contexts. Chen et al. further note that Bandura (1997) recognized the importance of self-efficacy beyond "situational demands":

> *Powerful mastery experiences that provide striking testimony to one's capacity to effect personal changes can also produce a transformational restructuring of efficacy beliefs that is manifested across diverse realms of functioning. Such personal triumphs serve as transforming experiences. What generalizes is the belief that one can mobilize whatever effort it takes to succeed in different undertakings. (p. 53)*

Pajares (1996) suggested that self-efficacy affected perseverance and resilience in the face of difficulty as well as emotional responses and thought patterns. In 2002, Pajares noted that "Self-efficacy beliefs provide the foundation for human motivation, well-being, and personal accomplishment." Bandura's 1994 definition of self-efficacy was more expansive*:*

> *Perceived self-efficacy is defined as people's beliefs about their capabilities to produce designated levels of performance that exercise influence over events that affect their lives. Self-efficacy beliefs determine how people feel, think, motivate themselves and behave. Such beliefs produce these diverse effects through four major processes. They include cognitive, motivational, affective and selection processes. (p. 71)*

Bandura (1994) further suggested that people with a strong sense of self-efficacy view challenging problems as tasks to be mastered; develop deeper interest in the activities in which they participate; form a stronger sense of commitment to their interests and activities; and recover quickly from setbacks and disappointments. On the other hand, people with a weak sense of self-efficacy avoid challenging tasks; believe that difficult tasks and situations are beyond their capabilities; focus on personal failings and negative outcomes; and quickly lose confidence in personal abilities. The research of Dweck (2006) is aligned to the construct of self-efficacy. She shares the following: "For twenty years, my research has shown that the view you adopt for yourself profoundly affects the way you lead your life" (p. 6). Her conception of a "growth mindset" versus a "fixed mindset" recognizes resilience and persistence in the face of failure: "Even though they felt distressed, they were ready to take the risks, confront the challenges, and keep working at them" (p. 9). Individuals who have strong self-efficacy beliefs are likely to have growth mind-sets.

Numerous studies have demonstrated that individual self-efficacy beliefs powerfully influence achievement outcomes (Bandura & Schunk, 1981; Bong, 1997; Jimenez Soffa, 2006; Pajares, 1996; Pajares & Schunk, 2001; Stajkovic & Luthans, 1998). Graham & Weiner (1996) concluded that, particularly in psychology and education, self-efficacy has proven to be a more consistent predictor of behavioral outcomes than have any other motivational constructs.

Bandura, et al. (1999, p. 259) note that "academic self-efficacy, which centers on perceived capability to fulfill academic demands, comprised children's beliefs in their efficacy to manage their own learning activities; to master different academic subjects; and to fulfill personal, parental, and teachers' academic expectations." They suggested that self-efficacy beliefs were a primary motivating factor of goal setting and academic achievement. Social self-

efficacy "includes perceived capabilities to develop and maintain social relationships, work collegially with others, and manage socially conflictful situations."

In his 1997 publication *Self-Efficacy in Changing Societies*, Bandura discussed the repercussions of low self-efficacy in the academic domain, noting that children with a high sense of self-efficacy "behave more prosocially, are more popular, and experience less rejection by their peers" (p. 19) than children who experience academic challenges leading to diminished perceived self-efficacy. These various characteristics associated with self-efficacy support the relevance and importance of studying this construct in the context of a therapeutic high school setting. Relevant to the current research, Bandura (1997) argues that:

> *Students with low social and intellectual efficacy are likely to gravitate to peers who do not subscribe to academic values and life-styles. Over time, growing self-doubt in cognitive competencies foreclose many occupational life courses, if not prosocial life paths themselves. (p.19)*

Bandura, Pastorelli, Barbaranelli, & Caprara (1999) studied the link between self-efficacy and childhood depression, recognizing that social and academic self-efficacy affect prosocial behavior, which in turn affects academic achievement and degree of problem behavior. Diagrams of the path analysis resulting from this study are included in Appendix B.

While educators have become more adept at differentiating instruction to meet the needs of varied student populations, we may need to invest more time in understanding how we can differentiate to enhance self-efficacy beliefs. Usher & Pajares (2006) encourage research on the way in which "sources predict self-efficacy differently for boys and girls, for students of varying ability level, or for students of minority race or ethnicity, then attending differently to the different sources in schooling practices and academic interventions" (p. 130).

> *Students who were below-level in reading also reported fewer mastery experiences, vicarious experiences, and social persuasions, as well as higher physiological arousal and lower academic self-efficacy, than did students who were above reading level. All educators are rightfully concerned for these students who, on the cusp of adolescence, report such disempowering self-beliefs. (Usher & Pajares, 2006, p. 138)*

Bandura (1997, p. 175) warned that "sorting students into ability groupings further diminishes the perceived self-efficacy of those cast into lower academic tracks."

Klassen & Lynch (2007, p. 495), referring to Dunning et al. (2004) argue that miscalibrations of self-efficacy beliefs are not trivial, as accurate assessments allow students to concentrate their efforts, adjust their behaviors, and plan more effectively when approaching a challenging task. The authors point to numerous studies which suggest that while students with disabilities rate themselves lower in self-efficacy than their more capable peers, they still overestimate their academic performance attributing failure to lack of effort rather than to lack of ability.

Sources of Self-Efficacy

Bandura (1997) identified four sources that influence perceived self-efficacy: mastery experiences, vicarious experiences, social persuasions, and physiological and emotional states (Appendix C). Schunk (1989a, p. 174), citing the work of Bandura, notes that:

> *Information acquired from these sources does not influence self-efficacy automatically but rather is cognitively appraised (Bandura, 1977, 1982). Efficacy appraisal is an inferential process: Persons weigh and combine the contributions of such personal and situational factors as perceived ability, task difficulty, amount of effort expended, amount of external assistance received, task outcomes, patterns of successes and failures, perceived similarity to models, and persuader credibility.*

Bandura (1994) also considered four psychological processes that affect human functioning: cognitive, motivation, affective, and selective. These sources and processes are considered next. These sources have particular relevance to the current study as data collection and analysis will variously seek to measure and understand how each of these factors is influenced by the introduction of a wireless grids enabled implementation of a social radio station.

Mastery Experiences & Cognitive Processes

Mastery experiences, "the interpreted results of one's purposive performance," are considered the most influential of the four sources that influence self-efficacy (Bandura, 1997, Pajares, 2006, Pajares et al., 2007). Pajares (2006, p. 345) argues that "Academic work should be hard enough that it energizes, not so hard that it paralyzes. Effective teachers know that tasks and assignments must always be at an accomplishable level of difficulty." In the domain of learning:

> *Students' belief in their capabilities to master academic activities affects their aspirations, their level of interest in academic activities, and their academic accomplishments. There are a number of school practices that, for the less talented or ill prepared, tend to convert instructional experiences into education inefficacy. These include lock-step sequences of instruction, which lose many children along the way; ability groupings which further diminish the perceived self-efficacy of those cast in the lower ranks; and competitive practices where many are doomed to failure for the success of a relative few. (Bandura, 1994, np)*

Ideally, academic environments challenge students to achieve their potential. Differentiated and personalized approaches to instruction seek to meet learners at their level by differentiating curriculum content, delivery, supports, and assessment in order to challenge but not overwhelm. The current study represents a type of "differentiated and personalized

approach" within a technology-mediated social networking environment. Margolis & McCabe (2004, p. 241) argue that to make tasks accessible teachers must "(a) give struggling learners work at their proper instructional and independent levels, and (b) adhere to instructional principles likely to improve self-efficacy" (Margolis & McCabe 2004, p. 241). For students with disabilities, Individualized Education Plans (IEPs) clearly outline academic and behavioral goals, criteria to measure the achievement of goals, and the supports necessary to address disabilities. Vygotsky's (1978) concept, the zone of proximal development, describes the difference between tasks individuals can tackle independently and those that can only be completed successfully with appropriate supports. The concept of "scaffolding" describes processes by which a more experienced individual assists a less experienced individual to complete a task (Bruner, 1978; Applebee & Langer, 1983; McKenzie, 2000; Vygotsky, 1978).

Project-based, inquiry-based, problem-based, and collaborative instructional modalities provide students with authentic, rigorous, and relevant opportunities to experience mastery. Unfortunately, educational policies that emphasize testing and accountability may undermine the potential of individuals and systems to differentiate and provide such experiential learning opportunities. For example, fear of failing to meet adequate yearly progress as a result of No Child Left Behind (NCLB) can lead to test-driven instruction. Resources that highlight the negative impact of an unbalanced focus include: (1) effects of performance standards on teaching styles (Deci, Ryan, et al., 1982); (2) impact of high-stakes testing as an educational reform (Ryan & Brown, 2005); and (3) impact of high-stakes testing on teaching and learning (Ryan & La Guardia, 1999; Ryan & Weinstein, 2009, Ravitch, 2010). The current study provides relevant, authentic opportunities for written and oral communications by infusing a social radio station experience into the curriculum. Student work in this collaborative, networked environment

addresses skills, strategies, and process knowledge measured by NCLB and the newly conceived National Core Content Standards.

Self-efficacy beliefs impact cognitive processes by influencing the "anticipatory scenarios they [people] construct and rehearse . . . . Those who doubt their efficacy, visualize failure scenarios and dwell on the many things that can go wrong" (Bandura, 1994, p. 74). Bandura (1989, p. 11) suggested that cognitive production "involves intention, creation, and exercise of personal agency." Individuals' decisions to pursue a course of action or undertake a task, according to social cognitive theory, are significantly influenced by perceived self-efficacy beliefs. A successful outcome requires more than beliefs, however. Relevant background knowledge and skills; an understanding of rules that apply to a particular domain (Feldman, 1980); and intentionality, persistence, and resilience in the face of challenges and failure are a few of the prerequisites for tackling and achieving successful outcomes. For students with emotional, behavioral, and/or learning disabilities, these requisite behaviors are often diminished even when perceived self-efficacy and instructional supports are present.

Differentiated tasks, scaffolding, proximal goal setting, and relevant technologies are some of the supports that enable cognitive processes. Modeling has become common in the teaching of reading, writing, and math. Teachers share their thought processes while reading a passage from a story, writing a descriptive essay, or solving a math problem. Students are challenged to share their own thinking in writing and orally during class discussions and as part of the assessment process. As noted in Bandura (1989), "Guided instruction and modeling that effectively convey abstract rules of reasoning promote cognitive development in children" (Bandura, 1986; Brainerd, 1978; Rosenthal & Zimmerman, 1978). Additionally, Bandura points to the work of Combs (1984), who argued that "cognitive competencies can be accelerated by

symbolically modeling the reasoning strategies for particular domains in systematic and highly informative ways" (p. 13).

Vicarious Experiences & Observational Learning

> *Modeling influences can serve as instructors, motivators, inhibitors, disinhibitors, social facilitators, and emotion arousers. (Bandura, 1989, p. 23)*

Vicarious experiences provide students with benchmarks for their own potential based on the performance of others who are deemed to have similar capabilities (Bandura, 1977, 1986; Rosenthal & Zimmerman, 1978; Schunk, 1987, 1989). "Students who observe a similar peer learn a task is apt to believe they can learn as well. Peer models may enhance self-efficacy better than teacher models among low-achieving students who doubt they are capable of attaining the teacher's level of competence" (Schunk, 1989, p. 183). In this way, the WeJay implementation of a private social-radio channel provided an opportunity for students to share individual and collaboratively produced written and oral communications in a safe, adult-moderated environment.

In the domain of education, we consider vicarious experiences in promoting observational learning. Bandura (1989, p. 21) contends that "humans have evolved an advanced capacity for observational learning," noting that "virtually all learning phenomena resulting from direct experiences can occur vicariously by observing people's behavior and its consequences for them" (Bandura, 1986; Rosenthal & Zimmerman, 1978). Clearly, this is not to suggest that a complex task can be mastered simply by watching someone. Observing a master pianist demonstrate a technique in a master class does not translate to proficiency on the part of the observer who does not invest the requisite hours of practice.

The potential of observational learning, according to Bandura (1989, p. 26), relies on "acquiring multiple subskills in selective attention, cognitive representation, symbolic transformation, and anticipatory motivation." Bandura notes that while newborns are adept at imitation, which proves most useful in early learning, other proclivities are developmental in nature. Young children, for example, have limited attention spans and cannot easily discriminate between important and unimportant information (Cohen & Salalpatek 1975, Hagen & Hale, 1973). Older students with attention-deficit disabilities are prone to the deficiencies of their younger counterparts. From an instructional standpoint, "In promoting observational learning, adults alter the behavior they model to compensate for the attentional limitations of children" (Bandura, 1989, p. 27). In order to act on observed behavior to facilitate personal effort, children must develop representational and production processes. In brief, through representational memory, children "learn how to transform modeled information into symbolic forms and to organize it into easily remembered structures" (Bandura, 1989, pp. 28–29). Production processes require translation of symbolic understanding into action. Finally, and most importantly, individuals must be motivated to act on "modeled knowledge." Here we cycle back to one's self-efficacy beliefs—the capability to successfully act in a supportive, safe context to tackle new tasks.

Bandura (1989) refers to Meichenbaum (1984), who argued that "*Observational learning* of thinking skills is greatly facilitated by modeling thought processes in conjunction with action strategies" (p. 25). *Think-alouds* are often used as an instructional strategy to make the thought processes associated with cognitive tasks explicit. Thus, when teachers are reading a story, they may pause and share what they are thinking about a character, action, or plot. Students may be asked to think-aloud while solving a math problem, giving the teacher another source of

information about student understanding or misunderstanding as well as solidifying new understandings for the learner. This type of modeling is facilitated in the 'safe context' implementation of the WeJay Social Radio Edgeware Gridlet.

Modeling offers another opportunity for vicarious sharing. Bandura (1989, p. 25) suggests that "On the basis of modeled information, people acquire, among other things, judgmental standards, linguistic rules, styles of inquiry, information-processing skills, and standards of self-evaluation . . . abstract modeling attests to the broad scope of observational learning (Bandura, 1986; Rosenthal & Zimmerman, 1978)."

Students with disabilities whose perceived self-efficacy has been diminished are unlikely to benefit from observing the successful performances of more capable peers. Additionally, Schunk (1989, p. 174) argues that "Information acquired vicariously typically has a weaker effect on self-efficacy than does performance-based information, because a vicarious increase in efficacy is negated easily by subsequent unsuccessful performances." However, under the right circumstances, modeled learning can be integrated into personal repertoire. One way is through an emotional connection. Bandura (1989, p. 32) argues that "What gives significance to vicarious influence is that observers can acquire lasting attitudes, emotional reactions, and behavioral proclivities toward persons, places, or things that have been associated with the model's emotional experiences." Again, this research provides students a real-world opportunity to share their work with peers and adults. The "right circumstances" are established through the implementation of WeJay.

In terms of measuring self-efficacy beliefs associated with vicarious experiences, Usher & Pajares (2006), referring to the work of Lent et al. (1996), note that instruments intended to measure vicarious experiences of self-efficacy collapse influences of peers and adults into a

single scale. They argue for two measures, and believe that "Until that is accomplished, the influence of vicarious experiences on self-efficacy beliefs will not be properly documented" (p. 139). Here, the implementation of WeJay collapses the teaching and learning space into an experiential space occupied by students and teachers in the pursuit of a common goal. The conceptual framework for this study, activity theory, provides an external model of this space and the interactions that take place within the space.

Verbal (Social) Persuasion

Verbal persuasion refers to messages delivered by significant others who have the power to influence beliefs about capabilities, which, in turn, have the potential to influence choices to engage in or avoid particular tasks. In the long run, they can impact decision-making regarding educational endeavors and subsequent career options. The power of the messages, according to Bandura (1997, p. 105), "is apt to be only as strong as the recipient's confidence in the person who issues them."

Usher & Pajares (2006), referring to the work of Bandura (1997) and Zeldin & Pajares (2000, p. 137), argue that "the message that a student is not capable of accomplishing particular academic tasks has the potential to influence the manner and degree to which that youngster will subsequently attempt such tasks, as well as the amount of effort and perseverance that the student will put forth in the face of obstacles." We must also be wary of delivering messages that raise false beliefs, as "undeserved praise and manipulative messages always run the risk of undermining confidence" (p. 138). Schunk (1989a, p. 174) reminds us that "Although positive persuasory feedback enhances self-efficacy, this increase is apt to be short lived if individuals' subsequent efforts turn out poorly."

When proper supports are in place, it is possible to scaffold students to more advanced levels of performance, thereby increasing their ability to tackle more complex tasks than they might attempt on their own: "Persuasions may also be more effective to the degree that they encourage individuals to accomplish moderately more than what they can do at the time" (Usher & Pajares, 2006, p. 139).

Physiological Arousal & Affective Processes

> *When people experience aversive thoughts and fears about their capabilities, those negative affective reactions can themselves further lower perceptions of capability and trigger the stress and agitation that help ensure the inadequate performance they fear. (Pajares, 1997, p. np)*

Physiological arousal is also known as affective arousal (Smith, 2002) and emotional arousal (Hagen et al., 1998). Schunk (1989a, p. 174) notes that "Students also derive efficacy information from physiological indexes (e.g., heart rate, sweating). Bodily symptoms signaling anxiety might be interpreted to mean one lacks necessary skills." However, physiological arousal does not always portend diminished self-efficacy.

> *It is not the sheer intensity of emotional and physical reactions that is important but rather how they are perceived and interpreted. People who have a high sense of efficacy are likely to view their state of affective arousal as an energizing facilitator of performance, whereas those who are beset by self-doubts regard their arousal as a debilitator. Physiological indicators of efficacy play an especially influential role in health functioning and in athletic and other physical activities. (Bandura, 1994, p. np)*

Zhao's (2011, p. 457) study of negative emotions associated with learning from errors pointed to the "possibility that negative emotionality, at least when it is of low intensity, can

stimulate motivation to learn and learning from errors . . . the association between negative emotions, and motivation to learn and learning, can vary across different specific negative emotions." He notes that his findings confirm the work of other researchers who address discrete/specific emotions (Lazarus, 1991; Roseman et. al., 1994; Smith & Ellsworth, 1985).

While this study focuses on academic self-efficacy, it is recognized that diminished social self-efficacy can undermine academic self-efficacy and vice versa. For students with emotional and behavioral disabilities, physiological arousal may lead to aggressive behaviors. Feindler & Engel (2011) studied these aggressive responses with the goal of developing programs to address deficits and teach pro-social conflict resolution. In the therapeutic high school setting for this study, emotional and behavioral disabilities are recognized as critical detractors from social and academic success. Teachers, social workers, and psychologists provide consistent, targeted, timely support for each student in an effort to curb inappropriate behaviors and to promote behaviors that facilitate learning. There is an understanding, in keeping with the work of Villavicencio and Bernardo (2012, p. 1), that "academic emotions are related to achievement and to cognitive/motivational variables that promote achievement." and that "for students who report both positive emotions [enjoyment and pride], self-regulation was positively associated with grades."

Informing Academic Achievement

Researchers have identified additional variables which inform students of their progress in learning and have the potential to influence self-efficacy beliefs and self-regulatory behaviors. These variables include, but are not limited to, goal setting, self-evaluation, product feedback, performance feedback, effort-attributional feedback stressing ability and effort, strategy and skill instruction, and reward contingencies (Bandura & Cervone, 1983, 1986; Schunk, 1985, 1989;

Usher & Pajares, 2006; Locke, Shaw et al., 1981). As with other sources that enhance or diminish self-efficacy and self-regulation, potency of the variables is dependent on personal, behavioral, and environmental factors (triadic reciprocality).

In his study of academic contexts, Schunk (1989b) called these variables "efficacy cues" —performance outcomes, attributions, social comparisons, persuader credibility, and bodily symptoms. *Performance outcomes* provide feedback not only on success or failure, but more importantly on "outcome patterns." When an outcome pattern signals that progress is being made, students are more likely to persist in the face of failure. Schunk (p. 16) notes that "early learning is often fraught with failures, but perception of progress can promote efficacy." *Attributions* identify perceived causes of success or failure and have been attributed to such causes as ability, effort, task difficulty, and luck (Frieze 1980; Weiner, 1985). Schunk refers to the work of Festinger (1954) in his discussion of efficacy cues derived from s*ocial comparisons.* Festinger (p. 16) "hypothesized that, where objective standards of behavior are unclear or unavailable, observers evaluate themselves through comparisons with those who are similar in the ability or characteristics being evaluated." Such comparisons bolster or diminish self-efficacy based on performance vis-à-vis peers. *Persuader capability* argues that the messenger is important. If a student perceives the messenger to be trustworthy and credible, the messenger's positive or negative messages will have a greater impact on self-efficacy. Bodily symptoms (physiological arousal) include agitation, sweating, trembling, etc. Students who experience such symptoms may perceive them as signs that they are not capable of tackling a task and achieving a successful outcome.

We consider several of these sources in greater detail in our discussion of self-efficacy and self-regulation in written and oral communications.

Dimensions of Self-Efficacy

Bandura (1977) identifies three dimensions of self-efficacy which impact performance—magnitude, generality, and strength. The *magnitude dimension* recognizes that individuals' efficacy expectations influence their evaluations of task difficulty. Ideally, academic environments challenge students to achieve to their potential providing appropriate supports, differentiated tasks, individualized outcome expectations, and relevant assessments. The *generality dimension* addresses the extent to which a particular experience is carried over to new learning contexts and domains. Generalization is more likely when a similar skill set is shared across domains (Bandura, 1994). For example, if a student writes a stellar research paper for a biology class, her perceived self-efficacy associated with that mastery experience vis-à-vis research and writing strategies and skills may carry over to a research assignment in her history class. The *strength dimension* suggests that "Weak expectations are easily extinguishable by disconfirming experiences, whereas individuals who possess strong expectations of mastery will persevere in their coping efforts despite disconfirming experiences" (Bandura 1977, p. 194). Students who are accustomed to receiving high grades are more likely to attribute a low grade to lack of effort rather than to lack of ability, thus preserving their perception of self-efficacy. Alternatively, a student who has experienced many failures might consider a success to be an aberration or a matter of luck, an instance of mastery that does not improve his perception of self-efficacy. Pajares & Johnson (1996) direct our attention to Nisbett & Ross' (1980, p. 171) discussion of the perseverance phenomenon, "the view that once acquired, beliefs tend to persist even in the face of conflicting information."

Motivation & Selection Processes

> *Perceived self-efficacy has a powerful influence over one's choice of activity, the kind of effort one expends, and how much one is able to maintain that effort in the face of difficulty (Bandura, 1986, 1997; Schunk, 1995).*

When students feel competent to tackle a task, make progress toward the desired goal (Schunk, 1991), and value the expected outcome of their efforts, they are more likely to engage in that task and persist in the face of obstacles (Bandura, 1986, 1997; Pajares & Johnson, 1996). Pajares (1997) refers to the work of expectancy-value theorists who "agree that judgments of competence play an interactive role with valued outcomes in determining the tasks in which individuals will engage (Eccles, 1983; Wigfield & Eccles, 1992). When students are motivated to engage in a task, it is also believed that they will be more strategic in their approach to the task, invoking self-regulatory behaviors that facilitate goal achievement (Bandura, 1986, 1989, 1994; Pajares & Johnson, 1996). Conversely, individuals with low self-efficacy are likely to avoid situations and tasks which are perceived to be beyond their ability (Bandura, 1977, 1986, Bandura & Adams, 1977).

> *When human development is viewed from a lifespan perspective, the influential determinants include a varied succession of life events that vary in their power to affect the direction lives take (Bandura, 1989; Brim & Ryff, 1980; Hultsch & Plemons, 1979).*

What do you want to be when you grow up? What's your favorite subject in school? What's your major in college? What do you do for a living? Most of us have been asked these questions at different points in our lives. A young child's answer to the first question might be influenced by significant others, a mother who is a doctor, a father who is a plumber, a favorite teacher, or a superhero in a computer game. Anything is possible for the young child. Then life

happens. Bandura (1989, np) identifies several variables, in addition to personal capabilities, that influence life paths: age-graded social influences provided by custom within familial, educational, and other institutional systems; parents' aspirations for their children; biological conditions; unpredictable occurrences in the physical environment; and irregular life events such as divorce, migration, accidents, and illness.

Bandura, et al., (2001) studied sociocognitive influences on the career aspirations of 272 children. Their findings revealed that:

> *Children's perceived academic, social, and self-regulatory efficacy influence the types of occupational activities for which they judge themselves to be efficacious both directly and through their impact on academic aspirations. . . . . Children's perceived efficacy rather than their actual academic achievement is the key determinant of their perceived occupational self-efficacy and preferred choice of work-life. (p. 187)*

Social self-efficacy also plays a role in decisions regarding career choices. Goh (2011), recognizing "the vital aspect of social communication skills required in most jobs . . . hypothesized that social self-efficacy will also predict job readiness levels." Referring to the work of Bandura and others, he notes that "individuals with high social self-efficacy will envision social success and seek to cultivate social relationships while individuals with low social self-efficacy tend to envision rejection or ridicule even before they establish social contact" (Bandura, Barbaranelli, Caprara, & Pastorelli, 1996, Bandura, et al., 2001; Pajares, 2002). The WeJay implementation can provide an opportunity to influence or revise some of the perceptions of self-efficacy held by students in a therapeutic high school.

Collective Agency & Shared Sense of Self-Efficacy

Activity theory, the conceptual framework for this study, recognizes both individual and collective agency in setting goals and acting to achieve desired outcomes. Our literature review discussion of activity theory explains how this conceptual framework is used to make the rules, relationships, and processes of outcome-directed individual and collaborative activity explicit. While this study does not seek to measure group self-efficacy, it is reviewed here briefly as part of the literature review. It is recognized that the research community is active in studying group efficacy as evidenced by studies in various domains including education (Lent, Schmidt & Schmidt, 2005; Pescosolido, 2001, 2003; Silver & Bufanio, 1996; Wang & Lin, 2006; Whiteoak, Chalip & Hort, 2004).

Silver & Bufanio (1996, p. 349) referred to the research of Bandura (1986), who argued that "group efficacy directly influences the extent to which group members can mobilize and coordinate their skills, the amount of effort they will put into the task and their persistence when group efforts fail to produce results." Silver & Bufanio (1996) examined the relationship between group self-efficacy, group goals, and task performance of 75 upper-level undergraduate students at a midwestern university. They found that "group self-efficacy was correlated significantly and highly with group goals and subsequent task performance" (p. 356). With this in mind, the eight-step activity theory model requires definition of group interaction around specific tasks to achieve desired outcomes.

Drawing on the work of Bandera (1997), Fernandez-Ballesteros, Diez-Nicolas, Caprara, & Barbaranelli (2003) studied the relationship of personal efficacy and collective efficacy through the lens of socioeconomics. The authors note that collective agency has been measured in various ways: (1) aggregating the perceived efficacy of individual group members, (2)

aggregating individual member "judgments of the group's capabilities as a whole," and (3) having a group arrive at a single judgment of the group's capability as suggested by Guzzo, Yost, Campbell & Shea (1993) (pp. 108–109). Each method draws pros and cons, a discussion that is beyond the scope of this review; however, it is noted that Bandura (2000, p. 76) criticized the consensual method, as the discussion around consensus could raise or lower the very belief being measured.

Related Constructs

While self-efficacy has been successfully used in isolation as a theoretical lens in numerous studies across domains, it is possible that reviewing related constructs in concert with self-efficacy could paint a richer picture of a learner's status as the subtle differences of related constructs are considered. For example, the concept of self-beliefs is an overarching concept that is embodied in several other motivational theories and their associated constructs—competence as a construct of Self-Determination Theory and self-perception as a construct of Attribution Theory. Each of these constructs defines self-beliefs differently, although the intention of each is to consider the learner's sense of herself in relation to an outcome. Additionally, viewed through related constructs, a learner might report positive perceived self-efficacy in terms of ability to complete a task but also feel over-controlled and perceive a lack of autonomy. Bandura (1986) discusses the construct of competence in relation to self-efficacy—recognizing the relationship between social cognitive theory constructs and self-determination theory constructs. Complexity is further recognized as we consider intra-theory construct relationships and inter-theory construct relationships. For example, self-efficacy beliefs are related to self-concept; however there is a key difference. Self-concept provides an evaluation of competence ("I'm good at multiplication"), while self-efficacy is concerned with perception of capability "I can solve all of

the multiplication problems on tomorrow's test." The perception of capability may well be derived for the evaluation of competence.

The effort to find common threads among theories of motivation is addressed by Steel (2006), who argued that "Our understanding of behavior has been hindered by the very extent of our efforts. There is a superabundance of motivational theories. Not only does each field have its particular interpretation, but there are ample subdivisions within each discipline." (2006, p. 789) Steel offers a case for integration of theories and suggests that "A common theme across the disparate disciplines of decision making and motivation is the desire for more comprehensive and integrated theories." (2006, p. 890)

When research designs adopt a particular theoretical lens, closing the door for a time to other lenses, are they missing pieces of the puzzle? Conversely, are other doors being opened? And, by using more than one construct are we finding pieces of the puzzle? This researcher sees the value of employing a conceptual framework, activity theory, which supports analysis of internal constructs (e.g., perceived self-efficacy and task value) and a mixed-methods approach that allows a qualitative and quantitative evaluation of the research questions.

Self-Efficacy in Written and Oral Communications

> *The various identities we bring to writing—racial, ethnic, religious, moral, sexual, and so on—are in dialogue with each other as well as with the text and the composer of that text. (Schultz & Fecho, p. 59)*

Referencing the work of various cognitive researchers, Pajares et al. (2007) suggest that perceived self-efficacy is a mediator of students' beliefs about their skills and proficiency in writing. Citing in particular Beach (1989), Faigley et al. (1985), and Pajares (2003), the authors further note that research findings "suggest that students' beliefs about their own writing

competence are instrumental to their ultimate success as writers" (pp. 105–106). Hackett (1995, p. 117) argues that that these beliefs about writing ability influence academic choices in high school and college. Furthermore, it is suggested that this predictive relationship "is the case even when powerful covariates such as writing ability or previous writing performance are controlled" (p. 105).

The big picture of how we develop as writers suggests that it goes deeper than facility in skills and process, however. For example, Schultz & Fecho (2000, p. 58) argue that writing development is tied to our social identities. Fecho's studies (1998, 2000) evaluated students' speech and writing to understand writing pedagogy and development and "illustrated how students learned—both as individuals and as members of a classroom community—the power of using language to inquire, theorize, and take a stance on issues intimately related to their lives," suggesting that "social identities had an impact on their learning and writing development." It is also clear that learning in general and specific to various domains such as writing is impacted by what students bring to the table. Dyson (1987), as noted by Schultz & Fecho (2000, p. 58), reminds us that students differ in their "knowledge of text structures, orthography, grammar, genres—and diverse modes of interaction with people and symbolic media," all of which are important when considering ability to tackle and fulfill the requirements of writing tasks.

Kindzierski & Leavitt-Noble (2010, p. 127), citing other researchers who recognize the writing challenges of students with emotional and behavioral disorders, note that these students "have more difficulty learning the writing process and produce writing that is less polished (Harris & Graham, 1999); have trouble finding enough to say and produce little writing (Graham & Harris, 1999), demonstrate difficulties with persuasive, narrative, and informative writing tasks (De La Paz, 2001; Harris & Graham, 1999); and have developed a negative attitude toward

writing as they leave elementary school (Collins, 1998; Hallenbeck, 2002; Harris & Graham, 1999)."

The requirements and ratcheting up of expectations in academic writing is evidenced in a recently published document on criteria for the Common Core State Standards in English Language Arts and Literacy K–12 (Coleman & Pimentel, 2011). The following are prescribed:

- In elementary school, 30 percent of student writing should be to argue, 35 percent should be to explain/inform, and 35 percent should be narrative.
- In middle school, 35 percent of student writing should be to write arguments, 35 percent should be to explain/inform, and 30 percent should be narrative.
- In high school, 40 percent of student writing should be to write arguments, 40 percent should be to explain/inform, and 20 percent should be narrative.

Rogers & Graham (2008, p. 879) paint a bleak picture for students who struggle with writing, arguing that they will be at a disadvantage academically, personally, socially, and economically. In an effort to understand and identify efficacious approaches to writing instruction, the authors conducted a meta-analysis of single subject design studies of writing interventions that focused on struggling writers, including those with disabilities. Based on stringent criteria regarding research design, nine treatments were recognized to be effective. These were: (1) strategy instruction for planning/drafting, (2) teaching grammar and usage, (3) goal setting for productivity, (4) strategy instruction for editing, (5) writing with a word processor, (6) reinforcing specific writing outcomes, (7) use of prewriting activities, (8) teaching sentence construction skills, and (9) strategy instruction for paragraph writing.

Graham & Harris (2009) analyzed over 30 years of writing research with a focus on the efficacy of the self-regulated strategy development model and four critical components necessary for writing proficiency stated succinctly as *strategies*, *knowledge, motivation, and skills*. Four overarching guiding questions were addressed: (1) Are skilled writers more strategic than less

skilled writers? (2) Do developing writers become increasingly strategic with age and schooling? (3) Do individual differences in strategic behavior predict writing performance? (4) Does teaching developing writers to be more strategic improve their writing performance? (p. 60). The analysis considered students with and without learning disabilities (LD), facilitating identification of key differences between the two groups for the variables under review. Their findings are summarized as follows: struggling writers minimize the importance of strategic writing behaviors such as planning and revising; poor handwriting, spelling and other basic skills cause attention to mechanics to disrupt thought processes and idea generation; lack of knowledge regarding the writing process also results in undue emphasis on form and mechanics.

Interestingly, the Graham & Harris review of research revealed that average writers were more positive about their desire to write than students with LD, but there was no difference between the two groups in self-efficacy for writing. This finding may corroborate the findings that students with LD sometimes overestimate their potential to achieve (Bandura & Schunk, 1981, Klassen, 2002). While a moderate degree of overconfidence may positively influence achievement (Bandura, 1997), Graham & Harris (2009, p. 63) cite the work of Sawyer, Graham, & Harris (1992), who suggest that "There is a downside to such overconfidence, as children who overestimate their capabilities may fail to allocate the needed resources and effort, believing it is unnecessary, or be more likely to quit when difficulty is encountered." Pajares (1996) reasoned that overestimation of self-efficacy may be associated with a misunderstanding of the task and/or poor self-knowledge. Instruction that addresses these deficits may improve alignment of self-efficacy beliefs with achievement outcomes.

Focusing on the domain of writing, Pajares, Johnson, & Usher (2007, p. 108) note that while the four factors that affect self-efficacy—mastery experiences, vicarious experience, social

persuasions, and physiological and emotional states—are statistically correlated, it cannot be concluded that they correlate for all students. "One need not search far to find a masterful writer who nonetheless approaches the task of writing with apprehension or even dread . . . whether an experience becomes a source of self-efficacy depends on how it is cognitively appraised by the learner."

Schulz & Fecho (2010, p. 57) reviewed the impact of the writing workshop model, which incorporated opportunities for peer interaction and collaboration. Peer interaction, opportunities to share, and received feedback from peers and teachers suggest that the environment is conducive to providing positive vicarious reinforcement and verbal persuasion. However, on closer evaluation, Lensimire (1993, 1994a, 1994b), in an evaluation of peer interaction in a third grade classroom, found that the workshops were not always friendly, supportive environments. He described the "writing workshop itself as an idealized community" and suggested that these idealized notions tend to focus on writing apart from its social context. Citing the work of Atwell, 1987; Calkins, 1986, 1991; and Graves 1983; Lensimere concluded that "It is not enough to follow the lead of the children as writing workshop enthusiasts advocate. That idealized perspective does not account for the micropolitics, local meanings, traditions, and values, and, in short, occasional unkindness of real children in real contexts."

Goldblatt (1995), in his study of three struggling urban high school students as they attempted to become "authors," also recognized a "social context of power and institutional relations," noting that "writing both challenged and extended cultural institutions and the ways in which institutions shaped the authority of individuals." (Schultz & Fecho, 2010, p. 55)

Willis (2011), a neurologist, teacher, and blogger, in a recent post on the brain and learning advocates the use of wikis and blogs as platforms to share varied ideas and approaches

to solving problems: “When learning is examined through shared writing, students are exposed to multiple approaches to solving problems.” She argues that building such communication skills and collaborations provides preparation for participation in science and math communities they might enter in the future. Willis is sensitive to the risk of ridicule associated with sharing and considers anonymous posting via a code name as an option to eliminate the fear factor. The WeJay environment offers new opportunities for teachers and support staff to interact with students individually and collectively in a safe environment.

Bandura (1989) argues that *oral communicative competency* is more powerfully influenced by “natural consequences than by arbitrary, extrinsic ones.” Bandura recognizes the power of “elaborative or corrective modeling.” For example, adults send the message that “using your words” is an acceptable way to ask for attention and have one’s needs met. The single word “juice” is repeated back to the child as, “I want some juice, please.” The child repeats the phrase, “I want juice, please” and receives the object of his desire. Bandura explains that “Success in getting others to do things that bring one different benefits is better achieved by grammatical speech than by unintelligible utterances. The demands for communicative accuracy, although minimal initially, increase as children grow older” (p.19) Bandura cites the work of Kasermann & Foppa (1981) who suggest that “If children possess sufficient linguistic knowledge, even signs of noncomprehension by adults lead children to correct their own speech in the direction of more accurate forms of language” (p. 19).

The demands on speaking and writing competencies escalate as individuals progress through school and enter the world of work. From round-robin reading and first oral reports to first impressions and forming strategic connections in business, the ability to communicate effectively is essential. It is probable that a child who stumbled through a read-aloud while

classmates tittered and urged her to read faster experienced diminished self-efficacy—doubtless, memories of positive and negative experiences return when opportunities to speak in public present themselves.

The Summer 2011 issue of the *Harvard Business Review OnPoint Magazine* titled *Manage Your Image* focuses on the importance of effective communication as a means to command attention and respect. In an interview with Lubar and Halpern, founders of the Ariel Group, Lubar suggests that "Presence comes from knowing who you are—and being comfortable with that. Everyone has a unique presence; a natural communication style" (p. 16). Individuals value and invest in developing their communications skills. They purchase self-help books, hire career coaches, join groups such as Toastmasters International, and attend trainings offered by such organizations as Dale Carnegie Training. The WeJay Social Radio Edgeware Gridlet allows students to practice their communicative skills. In the next section, consideration is given to some of the ways communicative self-efficacy and motivation can be supported.

Supporting Writing Self-Efficacy & Motivation

Pajares & Johnson (1996, p. 163) note that a strong sense of confidence "may serve a student well when writing an essay, not because it causes her to be a better writer, but because it engenders greater interest in and attention to writing, stronger effort, and greater perseverance and resiliency in the face of adversity." The key sources that influence perceived self-efficacy—mastery experiences, vicarious or observational learning, verbal persuasion, and physiological arousal (Bandura, 1997)—will now be reviewed through the lens of writing.

Caso, Garcia, Diez & Alvarez (2010) wished to determine if a writing self-efficacy intervention could improve writing product and processes. The program was based on Bandura's (1997) four sources of self-efficacy and targeted 5th grade students with disabilities. With the

experimental group they (1) established a positive psychological and affective state between students and teachers and among students; (2) introduced verbal persuasion and feedback; (3) introduced enactive mastery to make students aware that they could accomplish the writing task; and (4) introduced the concept of vicarious experience using modeling between the students (p. 200). Their findings showed the treatment to be effective "not only in the processes involved (frequency, time and moment), but also in the product (structure, coherence and quality)" (p. 294).

Vicarious experiences and observational learning provide students with benchmarks for their potential based on the performance of others deemed to have similar capabilities. Such experiences are supported through modeling of skills and processes associated with the craft of writing.

One form of modeling involves the study of works produced by proficient authors. Selected works are chosen to highlight a specific skill, technique, or process. These selections have been variously called mentor texts, exemplars, and anchor texts. There are issues that should be considered when using mentor texts.

Students should be told that mentor texts produced by accomplished writers represent countless hours and even years of engagement in the writing process. Ira Glass (2009), producer of *This American Life*, shares his journey as a writer in a YouTube video. The following excerpt from the video is relevant to student participation in the Wireless Grids Social Radio station.

> *"What nobody tells people who are beginners—and I really wish someone had told this to me . . . is that all of us who do creative work, we get into it because we have good taste. But there is this gap. For the first couple years you make stuff, and it's just not that good. . . . A lot of people never get past this phase. They quit. Most people I know who do interesting, creative work went through years of this. We know our work doesn't have this special thing that we want it to have. We all go through this. . . . It is*

only by going through a volume of work that you will close that gap, and your work will be as good as your ambitions. And I took longer to figure out how to do this than anyone I've ever met. It's gonna take awhile. It's normal to take awhile. You've just gotta fight your way through." (http://www.youtube.com/watch?v=BI23U7U2aUY).

Fletcher (2011, p. 8) suggests that when we provide mentor texts, students "will zero in on what they are ready to notice. . . . Too often we direct students to 'do stuff' with text, rather than allowing them the choice and time to encounter the text on their own terms." His newest book encourages teachers to support student autonomy, allowing them to choose what to mark up in a text, to discover what speaks to them, to name what they wish to take away, to save snippets of text, and to discuss the selected texts in small-group or whole-classroom discussions.

Another form of modeling is sharing of student writing. This sharing is an integral component of the writing workshop (Atwell, 1978; Calkins, 1986, 1991; Graves, 1983). When students share their own work in a safe social context it has the potential to resonate with, motivate, and scaffold the work of their peers. Fecho and Shultz (2000) note that Lensmire (1993, 1994a, 1994b) provided a critical examination of the social context of the writing workshop in which he challenged "the romantic portrayals of both children as innocent writers and the writing workshop itself as an idealized community, he suggested that these idealized notions tend to focus on writing apart from its social context . . . he suggested that educators pay attention to the community of writers we create." (p. 57). For students whose self-efficacy and resilience are compromised as a result of a disability, a safe environment free from thoughtless ridicule is essential.

Bawarshi and Reiff (2010) call our attention to Freedman (1994) who questions the value of models in favor of immersing students in writing genres.

> *Instead of having students read and explicate models, successful genre pedagogy is based on "eliciting appropriate thinking strategies" (111) through indirect or implicit methods. Freedman argues that "full genre knowledge (in all of its subtlety and complexity) only becomes available as a result of having written. First comes the achievement or performance, with the tacit knowledge implied, and then, through that, the meta-awareness which can flower into conscious reflexive knowledge" (Freedman, 1994, p. 205).*

Mastery experiences result from successfully engaging in and accomplishing a task. Vicarious experiences and observational learning provide one source of preparation for learners to act. Zimmerman and Kitsantas (2002, p. 660) note that emulation is the second level in the social cognitive model of sequential skill acquisition in which students "enact" what has been modeled. Referring to writing, they note that "Emulative performance experiences provide aspiring writers with behavioral and often social feedback to refine their performance and to develop self-regulative standards that are essential for higher levels of learners." Thus powerful modeling followed by opportunities and support to successfully emulate such models can lead to mastery experiences with the potential to influence perceived self-efficacy. As powerful as mastery experiences can be, Pajares et al. (2007) remind us that not all such experiences influence self-efficacy.

> *A young writer may well write an effective essay that impresses her teacher and peers, but her internal standards may be so high that the same essay will neither please her nor strengthen her confidence as a writer. Such a student fails to perceive her success as an experience of mastery. In other words, her subjective interpretation does not match her objective performance. (p. 115)*

Verbal (social) persuasion, another powerful source of self-efficacy, influences beliefs about capabilities based on messages delivered by significant others. A review of the literature suggests that feedback is a powerful source of verbal persuasion in the domain of writing. Feedback may be shared variously through interactive dialogue, peer collaboration, and student teacher conferencing, etc.

> *To ensure that students approach writing with less anxiety and stress, it is wise for teachers to frame writing feedback in terms of gains rather than shortfalls (Bandura, 1997). In other words, it pays dividends for a teacher to provide students with feedback focusing on how far they have come rather than how far they have yet to travel. When encouraged to reflect on their writing progress rather than their writing deficiencies, young people develop robust efficacy beliefs that lead to growth and perseverance. (Pajares, et al., 2007, p. 116)*

Referring, once again, to the work of Gersten and Scanlon (2002, p. 69) and their advocacy for a procedural facilitators approach to modeling complex processes, it is noted that "research suggests that how teachers—or proficient peers—respond to students' attempts to use the strategies or procedural facilitators is every bit as important [as modeling]."

Pajares, et al., (2007, p. 116) note that "messages students receive from adults and peers about their writing are directly related to the degree of confidence students feel toward themselves as writers." Bomer (1995, p. 37) said it simply: "sometimes just a vote of confidence is all that's needed to keep a writer writing."

Mason and Graham (2008) review the work of Wong et al. (1994, 1996) who were particularly interested in interactive dialogue to support writers with learning disabilities or English as a second language during the planning, writing, and revising. Students were taught how to dialogue with the teacher and with other students. Dialoguing included asking for

clarification and elaboration at the sentence and phrase level as well as at the level of the complete essay. The conclusions drawn from their experimental study showed interactive dialogues to have a "strong positive impact on the quality of students' writing (effect size = 1.52) at posttest" (p. 106).

Arguing that students with emotional and behavioral disabilities become overly dependent on their teachers for feedback in writing revision, Kindzierski and Leavitt-Noble (2010) conducted a qualitative research study which examined the academic and affective effects of peer revision, They asked two questions: (1) What do students discuss during the peer revision process? (2) What social roles/identities do students assume during peer-structure writing instruction? (p. 129). They concluded that "students should practice their writing on a daily basis for steady improvement to occur," that "students with behavioral disabilities can provide useful feedback for their peers and practice effective revision techniques without strong reliance on the teacher," and that the "belief that students with emotional or behavioral disabilities are unable to provide and use advice is also unsubstantiated" (p. 135). These types of interactions have particular relevance to the WeJay implementation that teams students to produce radio shows.

Bruning and Horn (2000) argue that students respond best to feedback that helps them move toward their writing goals. The authors cite research that validates the importance of specificity, pointing to the case study research of Straub's (1997), which revealed that "students respond favorably to specific and explicit ways to improve their writing" (p. 32). Other studies corroborated the power of specificity noting that "students responded very well to comments that dealt with organization, development, and matters of form, but resisted comments that dealt with the value of their ideas or issues they did not consider germane to the writing task (Cleary, 1996; Larson, 1995; Straub, 1997).

Bandura (1997) suggests that we can help individuals to reinterpret their *physiological responses* to stress-inducing situations in more positive terms. Bruning and Horn (2000, p. 34) suggested that "In writing, this would involve helping students understand their feelings of anxiousness before or during writing as a normal physiological response to a challenging and stimulating task—not as a signal that they are about to fail." Pajares (2007, p. 117) advised that "To help young writers avoid the paralysis produced by the type of apprehension commonly known as writer's block, a teacher can encourage students to read their own feelings and to express these feelings as they approach writing tasks."

As noted earlier, *perceived self-efficacy impacts motivation*—"because people's perceptions of their efficacy touch, at least to some extent, most everything they do" (Bandura, 1984, p. 251), "self-efficacy judgments are both strong predictors of academic performance and important motivational factors" (Pajares, 1996, p. 163).

According to Bruning and Horn (2000, p. 28), "self-efficacy has emerged as a major focus in studies of writing motivation." The authors identify four clusters of conditions that influence writing motivation: "nurturing functional beliefs about writing, fostering engagement using authentic writing tasks, providing a supportive context for writing, and creating a positive emotional environment" (p. 25). A detailed list of enhancing conditions associated with each cluster is shared. Several of these conditions are realized in the context of the proposed research study including, but not limited to "providing students with opportunities to build expertise in areas they will write about; encouraging writing in a wide variety of genres; encouraging students to write about topics of personal interest; having students write for a variety of audiences; integrating writing instruction into other disciplines; teaching writing strategies and helping students learn to monitor their use; giving feedback on progress toward writing goals;

using peers as writing partners; giving students choices about what they will write; utilizing natural outcomes (e.g., communication success) as feedback source; creating a safe environment for writing" (p. 28).

Belief in one's competence as a writer also seems to be an essential prerequisite to writing motivation. Referring to Oldfather (1993, 1994), Bruning and Horn suggest that: "Writers' discoveries of their own voice and their growing ability to express it would seem to have considerable potential for developing motivation to write" (p.30).

Summary

More than two decades of evaluative research has shown self-report of perceived self-efficacy to be a valid predictor of achievement outcomes. Pajares (1997, p. 34) argued that "self-efficacy beliefs measured at various levels of specificity can prove useful outside the research arena as diagnostic and assessment tools—they can provide teachers and counselors with information regarding students' dispositions, and results may be useful in helping to understand affective influences on performances that do not easily lend themselves t*o microanalytic analysis"*.

Pajares and Johnson (1996) stress the importance of preventing students from developing negative perceptions of their abilities. For students with disabilities, this is not a trivial charge. "Given the academic failure that some students experience, this is a challenging task. Nonetheless, it is evident that a student should be able to face difficulties, or even fail, without losing the confidence required to try again and to improve" (p. 171). Bandura (1986) argued that

> *Educational practices should be gauged not only by the skills and knowledge they impart for present use but also by what they do to children's beliefs about their capabilities, which affects how they approach the future. Students with a strong sense of*

> *self-efficacy are well equipped to educate themselves when they have to rely on their own initiative. (p. 417)*

We know that evaluation is particularly predictive when individuals have detailed information about a task—writing a news story for a journalism class, solving math problems in a calculus class, etc. These findings support Bandura's (1997) argument that self-report of perceived self-efficacy best predicts outcomes associated with specific domain-level tasks. Pajares (1997, p. 34), referring to the work of Lent and Hackett (1987), argued that "Domain specificity should not be misconstrued as an extreme situational specificity that reduces efficacy assessment to an atomistic level." While micro level specificity may increase reliability and validity, it would likely be at the expense of relevance and generalizability of findings. Written and oral communications, two skills essential to participation in personal, academic, and professional endeavors, are honed through support of peers and professionals. This support is enabled through the introduction of the WeJay Social Radio Edgeware Gridlet.

Self-Regulation in Written & Oral Communications

> *Students who are confident in their self-regulatory abilities believe they are capable of employing the metacognitive skills required to implement strategies and manage resources necessary to effectively perform a task (Usher & Pajares, 2006, p. 129).*

"Teachers, and particularly teachers of students with emotional/behavioral disorders, are increasingly faced with challenges regarding the instruction and management of their students" (Sutherland, 2002, p. 110). Numerous research studies have attended to emotional and behavioral disorders and interventions to facilitate self-regulation (Singer, 1999; Sutherland, 2000; Coleman & Webber, 2002; Klassen, 2010; Zimmerman, 1996).

Bandura (1991) recognized self-regulatory systems as "providing the very basis for purposeful action" (p. 248), describing three principal subfunctions of self-regulation: (1) self-monitoring of one's behavior, its determinants, and its effects; (2) judgment of one's behavior in relation to personal standards and environmental circumstances; and (3) affective self-reaction. He notes that these subfunctions are not mutually exclusive; they interact. He further notes that self-regulation "encompasses the self-efficacy mechanism". Self-regulation strategies have the potential to influence quality of writing, leading to mastery experiences, and mastery experiences engender confidence and willingness to persevere when tackling complex tasks. Zimmerman (2001, pp. 5–6) offers an extensive overview of self-regulation in the domain of learning in general and then through the lens of various theories. His 1986 definition notes that "Students are self-regulated when they are metacognitively, motivationally, and behaviorally active participants in their own learning process." He further notes that many definitions recognize a "feedback loop" by which individuals adjust their overt and covert behaviors based on what is learned through monitoring of results. Finally, he identifies various reasons ascribed to employing self-regulatory behaviors—response to rewards and punishments and alternatively a desire for self-esteem and positive self-concept.

According to Barkley (2011), disabilities such as attention deficit/hyperactivity disorder (ADHD) make self-regulation particularly challenging.

> *Self-regulation requires that a person have intact executive functions (EFs). The EFs are specific types of self-regulation or self-directed actions that people use to manage themselves effectively in order to sustain their actions (and problem-solving) toward their goals and the future. . . . ADHD is both SRDD (self-regulation deficit disorder) and so is also [Executive Function Deficit Disorder] EFDD. (np)*

Barkley offers several suggestions for supporting self-regulatory behavior for students with ADHD. To summarize, it is critical to create an environment that provides external cues and incentives to facilitate the internal cues available to those whose internal executive functions are intact.

We now consider self-regulation through the lens of goal setting, planning, and feedback.

Goal Setting, Planning, Feedback, & Self-Monitoring

Bruning and Horn (2000, p. 29) argue that "combining process goals with progress feedback not only brings about improvements in self-efficacy, but also increases both strategy use and writing skill." The authors cite the work of Cervone (1993, p. 30), noting that "Cycles of goal setting coupled with feedback regarding progress toward the goals often are necessary to activate a full capability for self-monitoring and self-regulation." Bandura (1986), in his discussion of self-efficacy theory, recognized progress feedback information to have a positive influence on perceived self-efficacy. Individuals who receive progress feedback believe they are competent to continue working on a task and to achieve a successful outcome. Schunk and Swartz's (1993, p. np) study on goals and progress feedback concluded that "combining process goals with progress feedback enhanced transfer of writing strategy use, skill, and self-efficacy and that process goals" and that "progress feedback, combined with a sound instructional program, foster writing skills, self-efficacy, and strategy use." Koenig (2010) refers to the work of Hattie (2009), who conducted a study of visible learning[3] related to achievement which synthesized over 800 meta-analyses, in order to identify "what approaches have the greatest effect on student achievement." Noting that an effect size of .4 is above average for educational

[3] "Visible learning refers to learning variables that are supported by observable data" (Koenig, 2010, p. 164)

research, .5 is equivalent to one grade leap and 1.0 is equivalent to two grade leaps, the "following results were reported as 'exciting'" (p. 165):

Table 1: Visible Learning Effects on Student Achievement

Influence	**Effect Size**
Feedback	0.72
Teaching self-verbalization	0.67
Metacognition strategies	0.67
Teaching problem solving	0.61
Direct instruction	0.59

When students compare their work to their more capable peers rather than to their personal improvements (progress), the results may lead to a "lower sense of self-efficacy and dysfunctional attributions will not sustain self-regulation" as noted by Schunk and Zimmerman (1994), who argue that a performance goal focus "may not highlight the importance of processes and strategies underlying task completion or result in a sense of self-efficacy for learning (p. 89)."

Song and Grabowski (2006, p. 446) consider two views of goal orientation: learning and performance. Citing the work of Ames (1992) and Dweck & Leggett (1988) the authors share the downside of performance goals but also the need for continued research as some studies show the desire to demonstrate high ability to affect higher motivation. "Students with a learning-goal orientation focus on learning, mastering tasks, and gaining understanding, whereas students with a performance-goal orientation focus on demonstrating their ability in relation to others, seeking public recognition for high-level performance, and avoiding judgment for low ability" (p. 446).

Goal setting can be particularly challenging for students who are dealing with emotional, behavioral, social, and cognitive issues (Bandura and Cervone, 1983; Locke et al., 1981). Goals that are specific, proximal, and attainable have been shown to enhance achievement outcomes

(Schunk, 1985, 1989a). Cleary (1991, p. 502) notes that students whose teachers helped them to break complex writing tasks into manageable parts viewed complex assignments as challenging but not overwhelming. Bruning & Horn (2000, p. 33) echo this suggestion: "Teachers can help break writing tasks into manageable parts, which not only reduces the processing demands of a complex task, but also allows students to monitor their progress and experience success during the writing process."

Bandura (1981, p. 595) emphasized the role of *goal setting* as an important factor in supporting perceived self-efficacy. He explored "proximal goal setting" in the area of mathematics as a means of "cultivating competence, self-efficacy, and intrinsic interest" (p. 586). His results confirmed that (1) students who set reasonable, proximal goals "heightened their perceived self-efficacy and interests in activities that initially held little attraction for them" (p. 595); (2) More able adults could support younger students who could not easily convert distal goals into proximal goals without diminishing proximal goal setting benefits; (3) "goal proximity fosters veridical self-knowledge of capabilities"—students were more accurate in assessing their own capabilities vis-à-vis the mathematical tasks[4]; (4) The results of the study substantiated Bandura's earlier findings that "judgments of self-efficacy are not simply reflectors of past performance. . . personal and situational factors can affect how well one performs"; (5) "evaluative standards against which on-going performances are appraised constitute an additional factor that determines how well people judge their capabilities" (p. 596).

De Caso, Garcia, Diez, and Alvarez (2010), citing the work of Graham and Harris (2003), argue that the shorter, more poorly organized writing of students with learning disabilities (LD) may be partly associated with differences in writing processes. They suggest that students with LD lack competence in planning, organizational skills, and ability to set goals (p. 198). Baker

[4] We consider this work to be associated with Vygotsky's concept of the zone of proximal development (ZPD).

and Gersten (2002) suggest that providing students with learning disabilities access to the challenging content such as writing and comprehension can be accomplished through "content enhancement techniques." While these techniques can take various forms, they proposed the use of "procedural facilitators," noting the work of Scardamalia & Bereiter, 1986. "Procedural facilitators are questions, prompts, or simple outlines of important learning structures that teachers use on a daily basis to help students emulate the performance of more expert learners" (p. 68). Adults and peers use the procedural facilitators as action plans which provide a guide to clearly "verbalize the processes that many proficient readers or writers or mathematicians go through when they solve academic problems" (p. 69).

Paris & Paris (2001, p. 91) discuss the importance of strategy use in self-regulated learning, noting that "teaching students to use strategies appropriately involved metacognition, motivation, domain-specific knowledge, and features of the classroom tasks." The authors point to prewriting strategies suggested in the work of Pressley et al. (1989, p. 92), which have shown positive benefits for elementary school students. Relevant to our review of sources which influence perceived self-efficacy is the potential for strategy instruction to influence "causal attribution of improved performance." For students with disabilities, these strategies have the potential to support positive achievement outcomes—mastery opportunities. Paris & Paris suggest that "If students believe that strategy use is the reason for success rather than attributing success to more stable factors (e.g., ability) or less controllable ones (e.g., luck, the teacher), they are more likely to utilize effective strategies in the future" (p. 93).

The self-regulated strategy development model (SRSD) has proven most promising in improving the writing of students with disabilities (Graham & Perrin, 2007; Graham, Harris, & Mason, 2005; Graham & Harris, 2003). The model incorporates six stages of instruction which

support students in development of cognitive and self-regulation skills including goal setting, self-instruction, and self-monitoring. SRSD models vary to accommodate the specific requirements of various genres of writing. However, each model addresses self-regulation, planning, organizing, and writing strategies.

While numerous studies have shown the efficacy of SRSD model for student with disabilities, Mastropieri, Scruggs, Mills et al, (2009) address a less-studied population, students with emotional and behavioral disabilities (EBD). Implementing the SRSD model for persuasive essay writing, in combination with instructional supports available in the context of a middle school setting designed to address the needs of an EBD population, proved to be highly effective. However, the researchers emphasize significant issues with time-on-task and considerable instructional time lost due to emotional and behavioral problems "which contributed to the necessity for extending the instruction considerably beyond the amount of time usually allocated to other students (e.g., students with learning disabilities)" (p. 38). Wigfield et al. (1998) proposed that "Crucial elements for fostering task involvement are varying the amounts of time available for different students to complete their work and helping students learn to plan their own work schedule and organize how they progress through the work." (p. 92) These elements are integral to the technology-mediated WeJay learning environment. The eight-step activity theory model, the conceptual framework for this study, makes these elements explicit.

This section concludes by recognizing the value of self-monitoring and self-incentives on self-regulation. These behaviors are considered as instances of motivational self-regulation (Bandura, 1991, Boekarts, 1996; Schunk and Zimmerman, 1994). According to Coleman and Webber (2002, p. 103), "self monitoring is the process of having individuals record data regarding their own behavior for the purpose of changing its rate."

Bandura (1991) points to the research of Perri & Richards (1977) and Zimmerman (1989, p. 258), arguing that "one of the factors which differentiates people who succeed in regulating their motivation and behavior to achieve what they seek from those who are unsuccessful in their self-regulatory efforts is the effective use of self-incentives."

Wallace (1977) notes that successful writers maintain self-discipline by making the pursuit of other activities contingent on completing a certain amount of writing each day or writing for a designated length of time. Wallace shares the habit of journaling and charting writing output by the page or word. This was the habit of several authors including Anthony Trollope and Ernest Hemingway. Wallace also found that successful writers invested a consistent amount of time each day, from Balzac, who worked six to twelve hours a day, and Flaubert, seven hours a day, and Conrad, eight hours a day.

> *While the story may be apocryphal-I should like to believe it is not-it is said that Victor Hugo sometimes forced himself to work regularly by confining himself to his study. To do this, he had his valet take away every stitch of his clothing, and ordered this servant not to return his attire until the hour when he expected to be through with his day's writing. (Wallace, 1997, p. 518)*

Single (2010), in her book *Demystifying Dissertation Writing*, encourages doctoral students to keep a writing log which charts the amount of time they write each day in order to "increase self-awareness regarding writing habits" (p. 47). Students need to hear these stories so that they will understand that high quality writing requires a commitment of time and effort. No matter how accomplished the writer, this message applies.

Singer and Bashir (1999) suggest that speaking and writing are correlated with the three sub processes of self-regulation they define as—self-monitoring, self-evaluation, and behavioral adjustment. The authors design a self-regulated approach to dealing with oral and written

communications which teaches individuals to self-reflect, self-evaluate, and modify their behavior when they recognize negative experiences associated with "ineffective verbal expression" such as anxiety, louder volume, and pitch. They share an intervention success story of a 16-year old boy: "George's ability to become more self-regulated progressed rapidly. By the end of the school year he was experiencing success with his oral and written expression in both English and History. George's expression was relaxed, fluent, organized, coherent, and intelligent." This approach is particularly relevant to the technology-mediated WeJay environment, where student productions are developed in concert with peers, teachers, and support staff, who provide supportive feedback in a safe environment.

Complexity of Self-Regulated Learning

Nenninger (2005) considers the range of complexity of processes underpinning self-regulated learning, suggesting that "the more comprehensive ideas about self-regulation mainly contribute to a better understanding of the phenomenon as it appears than to a consistent explanation of its underlying processes" (p. 239). He further notes that "self-regulation in learning actually appears as an amalgam of partial theories rather than as a precise and well-formed explanatory structure" (p. 240). As such, research on self-regulation that posits inconsistencies with existing theory is important in revealing "explanatory gaps or unsolved problems within and outside the process of learning."

Task Value & Task Engagement

While social cognitive theory incorporates the concept of expectancies, Expectancy-Value Theory (EVT) (Eccles et al., 1983; Wigfield & Eccles, 2000) explicitly attends to the construct of "task value." Liem, Lau, and Nie (2008, pp. 487–488) note that EVT constructs of self-efficacy and task value—belief that an academic task is worth pursuing—are "two key

components for understanding students' achievement behaviors and academic outcomes." Eccles et al. (1983) note that task value has proven to "reliably predict both intention and actual decision in taking further studies in mathematics and English." Related to Bandura's 1981 study of proximal goal setting, EVT suggests that students' broad learning goals are a "determinant of their self-efficacy and task value."

Csikszentmihalyi (1990, p. 49) argued that people engage in tasks to experience joy and happiness. His seminal work, which describes "flow experiences," identifies eight components of enjoyment which are congruent with Bandura's conception of self-efficacy and self-regulation. Here we highlight the first four: (1) we confront tasks we have a chance of completing, (2) we are able to concentrate on what we are doing, (3 & 4) concentration is possible because the task undertaken has clear goals and provides immediate feedback. Csikszentmihalyi's components and the theme of positive engagement resonate with the work of other researchers. Schunk (1989, p. 174) reminds us that "Assuming adequate skills, positive outcome expectations, and valued outcomes, self-efficacy is hypothesized to influence the choice and direction of much human behavior." Paris & Paris (2001, p. 93) posit that cognitive engagement is likely to be realized when "tasks elicit the intrinsic interests of students, permit a sense of ownership, relate to life outside of school, allow for collaboration, communicate high expectations, and offer consistent support for students to meet those expectations."

Liem, Lau, and Nie (2008) studied the role of self-efficacy, task value, and achievement goals in students' learning strategies, task disengagement, peer relationships, and English-achievement outcome of 1,475 Year-9 students in Singapore. Relevant to this discussion is their finding that "in comparison to task value, the students' self-efficacy is more weakly predictive of the mastery goal adoption." They point to the work of Nicholls (1989, p. 504), who argued that

the "pursuit of mastery goals is underpinned more predominantly by a task-related belief than a self or ego-related belief." The authors note that the findings in this study are consistent with research conducted in North America supporting cross-cultural generalizability (p. 508).

At the heart of Bandura's (1993, p. 118) conception of self-efficacy is his argument that "It is difficult to achieve much while fighting self-doubt."

In the preceding section we focused on how individuals' and groups' conceptions of their competence and capabilities are formed as they tackle tasks individually and collaboratively to achieve goals. We also considered self-regulatory behaviors that guide action and support persistence and resilience in the pursuit of outcomes. Finally, we considered desire or motivation to engage in specific tasks.

Technological Landscape

Bandura (1989, p. 5) suggested that "Social and technological changes alter, often considerably, the kinds of life events that become customary in the society. Indeed, many of the major changes in social and economic life are ushered in by innovations in technology." This suggestion harkens back to the famous quote from Karl Marx (1955, np), "In acquiring new productive forces men change their mode of production; and in changing their mode of production, in changing the way of earning their living, they change all their social relations. The hand-mill gives you society with the feudal lord; the steam-mill, society with the industrial capitalist."

Neil Postman (1979) similarly weighted his understanding of information delivery in favor of technological determinism:

> *"the printing press, the computer, and television are not therefore simply machines which convey information. They are metaphors through which we conceptualize reality in one way or another. They will classify the world for us, sequence it, frame it, enlarge*

it, reduce it, argue a case for what it is like. Through these media metaphors, we do not see the world as it is. We see it as our coding systems are. Such is the power of the form of information" (p. 39)

Marx's, Bandura's, and Postman's comments suggest technological and social determinism, a viewpoint that is the antithesis of Bandura's (1986) anti-behaviroist arguments. While Marx foreshadowed the "mind-numbing" work of the assembly line in the new industrial society, today's information and communications technologies support the "mind-demanding" tasks of the knowledge worker.

Zhao, Englert, et al. (1999, p. 1) highlighted the *reciprocal relationship* of technology and educational practice: "(a) the constraints and affordances of the technology, (b) the educational goals and available theories about effective approaches, and (c) the social context in which the technology is applied."

Missing from Zhao's description is the extent to which today's information technologies are repurposed and exploited to address individual and collective goals. Often, uses of technology are transformed through individual innovation and agency and are used in ways not originally intended by developers.

Figure 2 provides a high-level framework of the evolving technological landscape and incorporates the constructs and technology for this study.

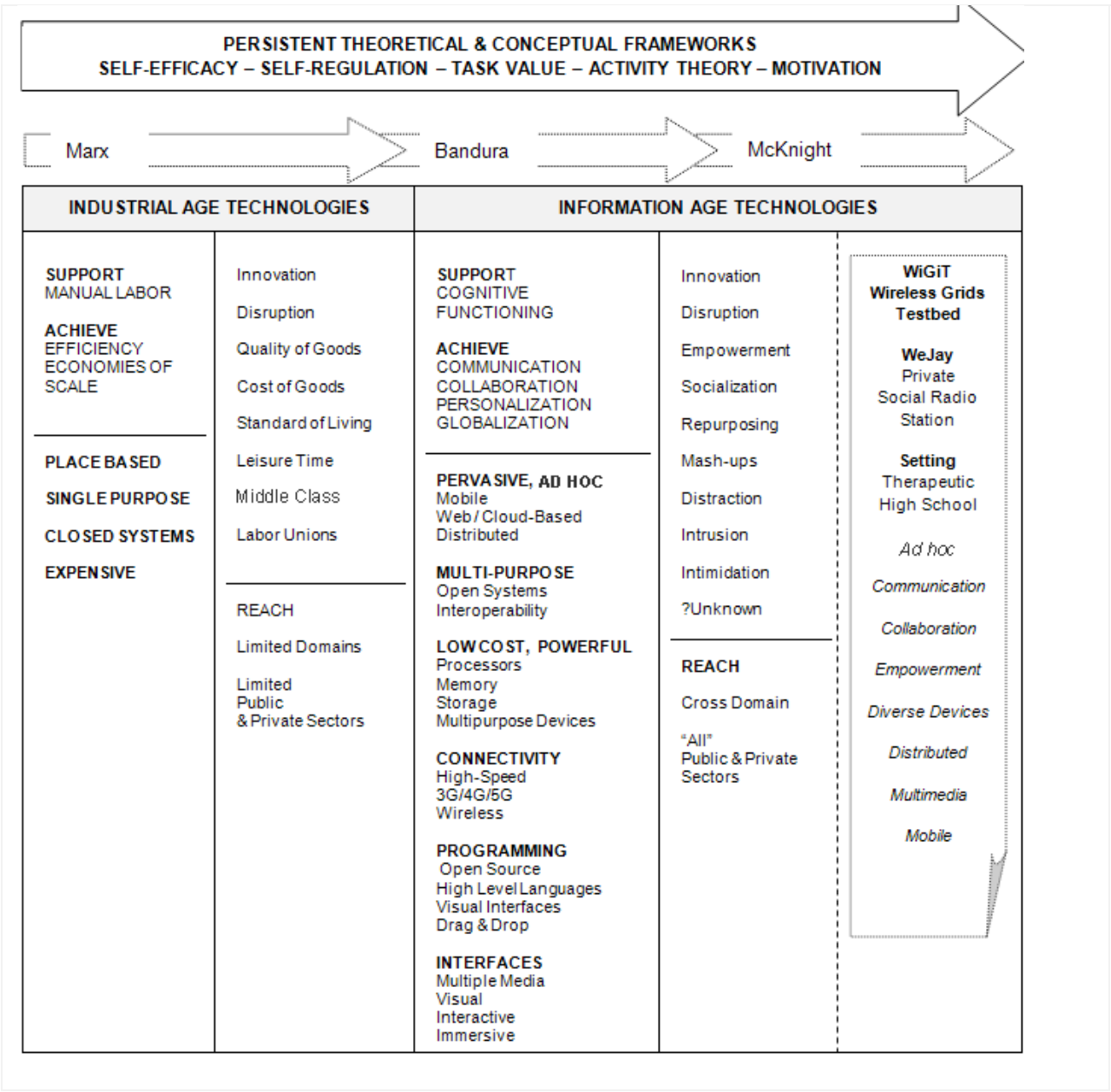


Figure 2: High Level Overview of the Evolving Technology Landscape

Technology, Self-Efficacy, Self Regulation & Task Value

Communication is no longer solely linear or purely text-based. Audio, video, images, and animation are embedded in text-based news stories as complementary components of digital storytelling. The tools to create these productions are low-cost and relatively easy to master.

Web 2.0 platforms such as blogs and wikis support individual and collaborative writing. Options to leave comments on blog entries, for example, facilitate conversation and feedback which can be public or private. These and other tools allow users to integrate multiple media—audio, video, images, and animations—with text communications. They also provide options to embed content generated using other tools, for example, Voicethread (http://www.voicethread.com), Glogster (http://glogsteredu.edu.glogster.com/), and Prezi (http://www.prezi.com).

Subscription options such as Really Simple Syndication (RSS), e-mailed newsletters, and content pushed via alerts associated with user interests encourage writers and producers to grow audiences for their web-based publications. Social networking platforms such as Facebook and MySpace initially catered to sharing among friends. Today these networks and others are also leveraged by businesses and educators as public relations, marketing, and customer service platforms and opportunities for creative learning experiences (e.g., literary characters on Facebook with whom students can interact).

Trupe (1997, p. 118) asked, "When we incorporate these kinds of educational technology [Web sites, e-mail, electronic conferences], we need to think about the different writerly skills these texts require students to develop. What kind of literacy are we encouraging?" Bawarshi and Reiff (2010, p. 1) reference the work of Trupe (2002) when she studied the impact of new media literacies on college writing courses arguing that "the move into electronic environments

rapidly began to revolutionize classroom practices and genres"—genres are becoming multimodal or "hybrid."

An English teacher shares the experiences of her students who wrote multimedia research papers using wikis—calling their work wikified research:

> *As last year's classes dipped their feet in Daniel Pink's* A Whole New Mind *they also embarked on a research paper, however this paper was far from ordinary. A WRP, or wikified research paper (http://tinyurl.com/3opzdwz), is made on wikispaces.com and allows students to link to resources within their papers, along with embedding various images and videos within their papers. (http://tinyurl.com/3m3wsqj)*

Bawarshi and Reiff (2010, p. 161), in their study of "Genre Research in Public and New Media Contexts," recognize Marcos Baltar's (2009) action research on the production of radio genres in an elementary school in Brazil.

> *Baltar found that students' performance of radio genres does indeed develop the critical reading and production skills of oral and written genres, engages students in meaningful language activities, and strengthens students' socio-discursive interactions with the school community. In addition to "the systematic teaching/learning work of written and oral genres," school radio offers "the possibility of developing a series of skills, providing the subjects involved with a more stimulating educational dynamic" (Baltar, 2009, p. 68).*

Baltar's work with radio genres further supports this WeJay initiative and validates the objective of this research to study the potential of incorporating a radio genre in supporting communicative competencies of fragile populations.

Current technologies facilitate learning opportunities which engage students in tasks that mirror real-world experiences in various domains—publishing, marketing, entertainment,

engineering, the sciences, etc. For example, multimedia presentations are often planned through the use of storyboards, mind maps, and scripts—forms of "procedural facilitators," cognitive supports, and external cues which support self-regulation and achievement of proximal goals. They are the same tools used in professional practice.

In their study on the impact of broadband connectivity in the United Kingdom, Banyard, Underwood, & Twiner (2006) asked, "Do Enhanced Communications Technologies Inhibit or Facilitate Self-Regulated Learning?" (SRL). Field researchers recorded examples showing SRL supporting and inhibiting activities and behaviors. Supportive activities included goal setting, strategy development, and monitoring of progress in the area of student research and writing, physical education, music, science etc. Inhibiting observations included unstructured, nonselective internet searching, skill deficits (keyboarding) that made recording information difficult, filtering software that blocked relevant sites, and instances where students copied and pasted content from Web sites without attribution. Interestingly, and most relevant to today's educational climate, the authors conclude that "broadband technology provides the opportunity for developing self-regulation skills but the assessment process does not give the opportunity to use these and in fact may discriminate against them" (p. 485). The wireless grid–enabled WeJay Social Radio Edgeware Gridlet offers a supportive, structured environment for students to engage in real-world writing and oral communications. Goal setting, strategy development, and monitoring of progress are integral to the radio station context.

An after-school blogging apprenticeship sponsored by Google, through its Citizen Schools enrichment program targets disadvantaged youth. A recent article by Barseghian (2011) titled "Can Learning How to Blog Change Makeal's Life?" on the web site MindShift recounts

the experience of a young boy whose school attendance, confidence, and "disposition toward learning" are revived through the experience of blogging.

Two recent studies considered news writing and "news making" in technology-infused environments. Ma and Yuen (2008) studied the impact of wikis on the learning experience of student journalists. They describe a wiki as a technology which empowers users to generate, revise, and organize their own content, suggesting that this functionality has the potential to positively influence self-regulation and, in turn, self-efficacy as students become more committed to revision as they respond to progress feedback from teachers and peers. The collaborative features of wikis are particularly suited to interaction among learners to accomplish proximal goals. They also provide a bridge to distal or long-term goals as content is continuously updated, organized, and embellished with the "big picture" in mind. The Ma and Yuen study concluded that "Wikis successfully mediate learners' revision behavior and finally writing performance" (p. 308). Similarly, the WeJay implementation will incorporate a wiki (Google Site) to support an individual and collaborative iterative writing process and to allow for progress feedback from peers, teachers, and support staff.

Vaataja (2010) studied user experience with mobile news-making technology. He recognized that smart phones incorporate multimedia capabilities that enable capturing of news content and publishing from the field. Citing the work of other researchers, his description of user experience is aligned to the conceptual framework for this study, activity theory, in that "User experience is often defined as a consequence of the interaction between a user and a product, system or service. It is affected by the characteristics of the user and the product as well as the contextual factors." In relation to self-efficacy, Vaataja uncovered some interesting findings. Reporters noted both positive and negative perceptions of their experiences. Positive

comments mentioned being viewed as "cool" by others who observed them tackling their craft with a mobile device. Negative comments highlighted writing that might include spelling and grammatical errors, as the phones did not incorporate spell-checking or grammar-checking. Photographers and videographers felt that their status was diminished, as they associated professionalism with the accoutrements of the trade—camera bags, lenses, and larger, more visible equipment. While both groups appreciated the speed of reporting afforded by smart phones, each shared reasons why the technology might have a negative impact on their professional image. In the case of the technology implementation for this study, the researcher monitored student and staff feedback regarding both positive and negative perceptions of a wireless grids implementation of a social radio station.

What Are Wireless Grids?

> *In the last decade, we have gone from a connected world (thanks to the end of the cold war, globalization and the Internet) to a hyperconnected world (thanks to those same forces expanding even faster). (Friedman, 2011)*

Untethering technology from the desktop changes the way we conceive of our relationships to our tools and to each other. Philosopher Andy Clark (2010) suggests that symbols, tools, and other artifacts are extensions of our minds, influencing how we engage with the world. Today's smart mobile technologies support engagement through anytime, anywhere (hyper)connectivity, communication, and collaboration among family, friends, and colleagues, offering new possibilities for innovating and tackling problems in the workplace, in education, and in our communities.

Wireless grids, an extension of the capability of grid computing[5], provide for the ad-hoc dynamic sharing of physical and virtual resources among heterogeneous devices. As noted by Ramnarine-Rieks, McKnight, and Small (2011, np), "One of the main advantages of wireless grids is that they can reach both geographic locations and social settings that computers have not traditionally penetrated." Sharing is made possible by "leveraging its patent pending 'edgeware' applications" (Schmitz, 2010). Edgeware is defined as "a new class of applications that can dynamically make use of content and resources present in devices—phones, pc's, cameras, printers, screens, etc. —connected by a wireless grid" (http://wigit.ischool.syr.edu/index.php/open-specs).

Manvi & Birje (2010) note that proliferation of wireless access points has quickly expanded the usefulness of these smart mobile devices, making it possible to include them in wireless grid networks. The authors identify key characteristics of wireless grids:

- No centralized control
- Small, low-powered devices
- Heterogeneous applications and interfaces
- New types of resources such as cameras, GPS trackers, and sensors
- Dynamic and unstable users/resources (p. 469)

A 2002 National Science Foundation Grant (NSF #0227879—2002-2006) funded research that identified several markets amenable to wireless grid solutions including education, emergency response, and health care. The grant also funded the establishment of the Wireless Grids Innovation Lab at Syracuse University. The lab, under the direction of Professor Lee McKnight, is dedicated to research, evaluation, and innovation focused on "the tremendous value proposition that wireless grid networks offer to both increase access to wireless communication

[5] "Grid computing is an important and developing computing initiative that involves the aggregation of network connected computers to form a large-scale, distributed system for coordinated problem solving and resource sharing." (Manvi & Birje, 2010, p. 469)

services, and to develop new economic sectors utilizing ubiquitous networks to access grid services" (http://wigit.ischool.syr.edu/).

Ramnarine-Rieks and McKnight (2010) recounted an early "proof of concept developed as a modest initial application called DARC* (Distributed Ad Hoc Resource Coordination - pronounced 'dark star')" (np) which allowed individuals to join their devices in ad-hoc fashion to mix audio—music and speech. This early application provided the impetus for the first educational research experiment with 24 high school students at the Museum of Science in Boston in July 2005. While the experience was considered a success as measured by student engagement and enthusiasm, the two-week period allocated for the project was not sufficient to determine learning or behavioral impact.

A second NSF grant (NSF #0917973—2009-2011) provided funding for the establishment of the Wireless Grids Innovation Testbed (WiGiT) (McKnight, Bose, Kingma, et al., 2009), a collaborative between Syracuse University (SU) and Virginia Tech (VT) along with partners from Massachusetts Institute of Technology (MIT), Tufts University, and Institute Superior Técnico, Lisbon. "The primary goal of WiGiT is to bring together unique technical assets from SU and VT for further evaluation and to establish a baseline set of open or public interfaces, specifications, or standards, for wireless grids" (Ramnarine-Rieks & McKnight, 2010, np). The WiGiT team presented specifications and standards at the TEDX Harlem conference in New York City in the spring of 2012. A brief overview of this study was presented by the researcher.

WeJay Social Radio Edgeware Gridlet

WeJay, the backbone for a high school radio station, is an example of an Edgeware application. According to John Andrews, CEO and President of WGC, WeJay "illustrates the

principles of zoned sharing[6] based on permissions provided by contextual relationships" (Andrews, 2010). Students who download the WeJay application will be able to find and invite other students to collaborate on a radio show. WeJay's intuitive drag-and-drop interface allows participants to create radio show playlists populated with content (music, podcasts, etc.) from their own devices and from the devices of friends who are invited to collaborate on the show. Individuals who have WeJay accounts may "tune in" to live shows and engage in live text-based chats while listening. For this study, students individually and collaboratively produced music, commentary, public service announcements, student-student interviews, staff-student interviews, etc., addressing curricular topics. Staff provided support and feedback related to skills, strategy, and background knowledge.

Within the context of a therapeutic high school setting, the research considers the impact of Wireless Grid Corporation's (WGC) implementation of a social radio station, WeJay, to influence communicative self-efficacy, self-regulation, and task value. It should be noted that Bandura (1977, p. 212) argues the following: "Because people have met with different types and amounts of efficacy-altering experiences, providing one new source of efficacy information would not be expected to affect everyone uniformly."

Activity Theory

> *The two modes of teaching and learning—privileging of individual work and the promotion of collective work—are frequently posed as polar opposites. Alternatively, however, they can be incorporated into a single vision of collaboration that includes both working together and working alone. Schultz & Fecho (2000, p. 57)*

[6] "zone-based self-organized clustering broadcasts neighbor information to only a zone with the same ID" (Sung, 2008).

Activity theory was conceived by Lev Vygotsky who, like Bandura, rejected a "straightforward view of culture and society directly determining or shaping the human mind" (Kaptelinin & Nardi, 2006, p. 39). Leontiev (1974), Vygotsky's student, argued that "activity is not a reaction or a totality of reactions," suggesting that culture is shaped by intentional human activity. Kaptelinin and Nardi further suggest that activity theory "construes consciousness as the product of an individual's interactions with people and artifacts in the context of everyday practical activity" (p. 8) and that the "analysis of activities opens up the possibility to properly understand both subjects and objects" (p. 31). A fundamental assumption of Activity Theory is that tools mediate or alter the nature of human activity and, when internalized, influence mental development (Jonassen & Rohrer-Murphy, 1999, pp. 66–67). While actor-network theory and distributed cognition consider the individual to be an equal player with other components of a system or network, Activity Theory and phenomenology "construct the individual as a technologically empowered and socially contextualized subject" (p. 207).

The Activity Theory framework suggests that an object- and outcome-directed activity is the unit of analysis within a particular context. However, the framework allows the researcher to consider each component of the model (tool, subject, rules, community, division of labor, objects, and outcomes) individually or in combination. The framework also supports strategic modification of component(s) to facilitate activity objectives. One component of particular interest in this study is a focus on the subject node—student-to-student collaborations, interactions between students and their mentors, and, where interesting findings deserve attention, individual students. Focusing on individual students provides a single subject lens that is valued when studying diverse populations in special needs settings (Odom & Strain, 2002).

Each of these views of the activity theory "subject" allows the data to speak to the research questions at varied levels of specificity.

The activity theory conceptual framework for this research study integrates collaborative goal setting as part of the model. The process of goal setting supports Bandura's (1981) exploration of "proximal goal setting" or development of short-term performance goals or sub goals which are achieved as one works toward a final or distal goal. Coupled with social cognitive theory, activity theory facilitates the study of self-efficacy and self-regulatory behaviors employed individually and collectively to achieve specified outcomes.

Activity theory provides a conceptual framework that enables researchers to understand the interactive and mediating influences associated with tasks and considers relationships between individuals, context, tools, action (activity), and outcomes in the pursuit of specified goals. As such it is an appropriate framework for the proposed study. Mwanza (2001) operationalized Engeström's Activity System using an eight-step model, which asks a series of questions. We consider these steps and questions in relation to the proposed study as follows:

Table 2: Activity System Eight Step Model

Activity System Using an Eight-Step Model Notated for this Study		
1. Activity	What activity is taking place?	Students individually and collaboratively produce music, commentary, public service announcements, student-student interviews, staff-student interviews, etc., addressing curricular topics. Staff provided support and feedback related to skills, strategy, and background knowledge.
2. Objective	Why is this activity taking place?	The goal of this activity is to develop programming for a wireless grids implementation of a social radio station.
3. Subjects	Who is involved in carrying out this activity?	Students, teachers, and support staff work collaboratively to produce shows for the station. Shows will be broadcast for the enjoyment of the high school community.

4. Tools (Mediating Artifacts)	By what means are the subjects carrying out this activity?	A wireless grids networked implementation of a social radio station, WeJay. A collaborative writing workspace (Google Site)
5. Rules and Regulations	Are there any cultural norms, rules and regulations governing the performance of this activity?	Teachers, support staff, and students develop the rules and norms associated with the programming and productions for the station.
6. Division of Labor	Who is responsible for what when carrying out this activity, and how are the roles organized?	Teachers, support staff and students were assigned roles within the radio station.
7. Community	What is the environment in which the activity is carried out?	The activity is carried out in the classroom and in the media center during an enrichment block.
8. Outcome	What is the desired outcome from this activity?	Programming developed by students and staff on the WeJay Social Radio Edgeware Gridlet which will be shared with the high school community.

Figure 3 provides a visual representation of these steps in a traditional triangular depiction of the eight-step activity theory model.

The eight factors associated with the model are: activity, mediating artifacts (tools), subjects, rules, community, division of labor, objects, and outcomes. The theoretical frameworks constructs—self-efficacy, self-regulation, and task value —are positioned at the center of the model as the eight factors individually and collectively mediate these constructs.

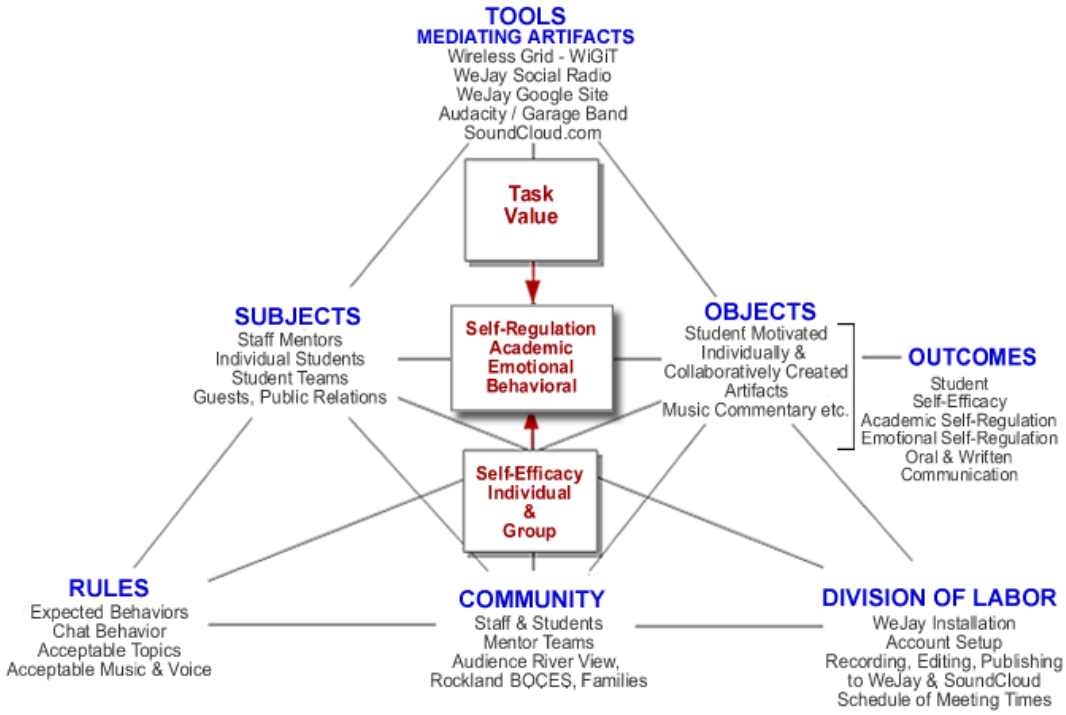


Figure 3: Activity Theory Eight-Step Model

A Lens to Observe, Interpret, and Evaluate Interactions and Outcomes

Educational environments are complex. Variables that influence and mediate processes to achieve outcomes are diverse and difficult to control in natural classroom settings. Differing philosophical beliefs associated with instruction and learning among teachers and administrators; diversity of student population in terms of ability, behavior, socioeconomics; and the particular needs of students with emotional, behavioral, and emotional, behavioral, and learning challenges are only a few of the factors that impact instruction and learning.

The Activity Theory framework offers a holistic lens for understanding complex environments and interactions; operations intended to achieve specific outcomes; and how actions and operations are mediated by artifacts. Individual and group agency, motivation, task value, group dynamics, and attention to historical, contextual, and situational factors are integral to activity theory. The theory recognizes both the complexity of activity and the iterative feedback loop associated with engaging in activities. Participating in an activity changes both the individual and the group and these changes, in turn, influence future goals, actions, and objects (desired outcomes). This researcher argues that Activity Theory provides a framework which supports interpretation and development of "thick" descriptions associated with individual and group goals, actions, and desired outcomes.

Activity theory, according to Nardi (1996), "is a powerful and clarifying descriptive tool rather than a strongly predictive theory" (in Uden, et al., 2008, p. 7). The theory considers "perspectives" and "concepts" and sets for itself a challenge of interpreting "the individual, other people, [and] artifacts in everyday activity" (p. 8). Referring to Engestrom's (1993, p. 8) version of the model, Nardi notes that activity is a conceptual tool which must be "concretized according

to the specific nature of the object under scrutiny." Nardi further suggests that employing an activity theory model in ethnographic studies, for example, would provide a way to lend some structure to descriptive accounts which have no a priori frameworks, "It would be desirable to be able to go back to previous work and find a structured set of problems and solutions" (p. 11). This study, similarly, considers the activity theory model to be a useful framework for supporting generalization associated with special needs settings. Because generalization of studies conducted in this vein are difficult due to the diversity of special needs populations, activity theory may prove helpful in teasing out useful similarities.

The research model for this study incorporates activity theory as a conceptual lens to facilitate observation, interpretation, and evaluation of outcomes associated with writing and oral communications mediated by a wireless grids implementation of a social radio station with a focus on perceived self-efficacy and self-regulation. Activity theory recognizes that mediation may be attributed to multiple tools. In the case of this study, we recognize WeJay as the end-point tool that makes student work available for "public" sharing, however, additional technologies and interfaces support the flow of actions and operations required to achieve the final outcome. Indeed, each step in the process might also be considered through the lens of activity theory.

The notion of individuals carrying out actions at different levels of proficiency (skilled vs. novice) is captured in the activity theory model through observation of individual and group actions and operations and resulting artifacts—the written work and musical compositions, for example, prepared for radio shows. In this study it was determined that students were influenced by the mediating tool (WeJay) more than others, motivating students, for example, to more highly value the desired activity outcome.

The actions and operations required to accomplish outcomes within the Activity Theory framework might highlight evidence of specific skills and strategies possessed by students who experience mastery, become role models for other students, receive attention and accolades for their work, and acquire a level of psychological and physical comfort when communicating with an audience—the four sources of perceived self-efficacy. Observation and review of artifacts may reveal individual and group skills, cognitive resources, and behaviors that might be targeted for direct instruction, feedback, and intervention by staff to support self-regulation (e.g., proximal goal setting). As individuals become more adept through targeted supports, then we might hypothesize that their interaction and outcomes would improve as evidenced by the activity theory framework–defined outcomes. This evidence and these revelations understood through the lens of activity theory might be generalizable to other academic environments. If this is the case, the activity theory model offers a framework to enhance and transfer what we learn in complex, diverse, special education settings.

In summary, this in-depth literature review of social cognitive theory, task value, activity theory, and Wireless Grids illustrates the relationships between self-efficacy, self-regulation, task value, task engagement, and current technological landscapes. The use of oral and writing skills as a way of measuring self-efficacy and self-regulation in relation to academic performance is shown to be well established in the research literature. A rationale for use of the eight-step activity theory model for studying the wireless grids implementation of WeJay, a social radio station, and its potential impact on the constructs under consideration is elucidated.

In this chapter an in-depth literature review was conducted providing a rationale for the overarching research question and the sub questions for this study, together with a theoretical

framework developed in support of these questions. In turn, the research questions and theoretical framework contribute to a proposed quasi-experimental research design which will be discussed in Chapter Three, focusing on methodology.

CHAPTER THREE: METHODOLOGY

In the previous chapter an in-depth literature review was presented supporting the rationale for the theoretical perspective proposed for this study. Social cognitive theory constructs of self-efficacy and self-regulation were advanced as the theoretical framework and an eight-step activity theory model was advanced as the conceptual framework. For the purposes of operationalizing this theoretical and conceptual framework in the context of a wireless grids implementation of a social radio station for students in a therapeutic high school setting, the activity theory model was elucidated and a Methods Flow Diagram was created (Appendix D). With an operationalizable framework in place, a proposed quasi-experimental research design is shared and the methodological approach is described.

Framing the Study

The primary goal of this study was to investigate the potential of a digital networked environment in the form of a wireless grids implementation of a social radio station, WeJay, to impact perceived self-efficacy and academic, emotional, and behavioral self-regulation associated with written and oral communications for students with cognitive, emotional, and behavioral challenges who attend an alternative therapeutic high school. Study participants were students, educators, and clinical support staff who work with students to help them to access the curriculum. The study employed a quasi-experimental one-group pretest-posttest within-participants design approach without a control group.

In the literature review for this study, Bandura's social cognitive theory (1977, 1986, 1997) constructs of perceived self-efficacy and self-regulation and Eccles & Wigfield's (1983, 2000) task value and motivation were discussed in the context of academic communicative competencies with a particular focus on students with emotional, behavioral, and learning

disabilities. These constructs have been shown to significantly influence individual and group conceptions of competence and capability to tackle tasks individually and collaboratively and to persist in the face of challenges in the pursuit of desired outcomes.

Activity theory, the conceptual framework for this study, was adapted by Engeström (1987) and operationalized by Mwanza (2001) using an eight-step model which describes how individuals and groups interact with tools to carry out activities in the pursuit of specified goals. The wireless grids networked implementation of a social radio station, WeJay, along with a collaborative writing workspace (a Google Site) and additional complementary tools to support script-writing (Microsoft Word), audio recording (Audacity), and persistence sharing (SoundCloud) were considered the mediational tools in the conceptual model. In addition to the mediating influence of tools, it should be noted that rules, community norms, and values, as well as the division of labor, influenced activity execution, objectives, and outcomes.

The activity theory conceptual model provided a lens to study what Hempel (1952, p. 350) identified as "unobservable constructs" (e.g., individual and group self-efficacy, self-regulation, and task value in the case of this study) which, in a reference by Silver and Bufanio (1996), "were too weak to be studied in isolation to generate verifiable consequences by deduction."

> *Activity theory emphasizes that internal activities cannot be understood if they are analyzed separately, in isolation from external activities, because it is the constant transformation between external and internal that is the very basis of human cognition and activity. (Kaptelinin, Nardi and Macaulay, 1999, p. 29)*

The model visually framed the abstract concepts of social cognitive theory in a way that illustrated to everyone involved (students, teachers, support staff, and researchers) the roles,

goals, relationships, social processes, and tasks related to the WeJay study. The understandings gleaned from the model allowed the researcher to observe and analyze the four significant sources of self-efficacy identified by Bandura (1997) that influence perceived self-efficacy: mastery experiences, vicarious experiences, social persuasions, and physiological and emotional states and how those sources were enhanced, diminished, or had no influence on perceived self-efficacy based on qualitative and quantitative data collected and analyzed over the three phases of the study. This data provided a richer understanding of WeJay and complementary tool impact vis-à-vis the research questions. The activity theory evaluation checklist provided a focus for observing and documenting what was learned about the beta version of WeJay as a mediator of individual, collaborative, and social activity.

Personal Bias

The researcher visited the research site and worked with teachers and students in the media lab at the high school on a weekly basis. During the 2010–2011 school year, the researcher collaborated with staff to integrate technology into various units of study. The researcher also conducted an after-school online and face-to-face professional development workshop, which addressed new media literacies. She did not provide direct instruction to students except for occasional technical support in the media lab. Frequent, varied interactions in introducing the WeJay project were thought to contribute to a comforting and supportive environment, and her presence during the research effort was not considered to be disruptive.

The researcher had established a trusting relationship with the principal of the high school and with the director of special education. There was an agreement among all members of the administrative, instructional, and support staff that writing and oral communications required more attention. There was also agreement that the end-of-day enrichment period would provide

the appropriate context for the study. The researcher was expected to provide technical support for WeJay and complementary technologies, but was not involved as a participant in creating shows for the WeJay radio station or in the instruction associated with writing, storyboarding, and rehearsing (orally reading) with the goal of producing shows. In the event that the researcher was asked to provide input regarding curriculum integration with WeJay, it was agreed that she could share ideas and provide examples. These supportive interactions and instructional suggestions were documented in the research study.

As Director of Information Resources and Learning Technologies for BOCES, the researcher's primary goal and responsibility was to identify and strategically plan professional development opportunities associated with the use of technologies to support teaching and learning. As such, the researcher had strong feelings about the potential of technology to positively influence learning outcomes. It was understood that technologies which prove appropriate for one audience may fall short in supporting another group of students. The researcher entered the study space with a belief that the proposed research would be of value whether it showed a positive, neutral, or negative influence vis-à-vis the research questions posed. The researcher's role in the study was delineated in the methods flow diagram and is described in the research design that follows. This clearly defined role assisted in mitigating any unintentional influence on the study by the researcher. The lens for the study was based on a theoretical and conceptual framework which guided the role as a nonparticipant researcher. The researcher interfaced with staff to introduce and train them to use WeJay, a Google Site (a repository for in-process and completed student writing) and complementary technologies, but did not play a role in influencing instruction or student support.

The current study points to the following arguments and prior research as a basis for establishing relevance of the selected theoretical and conceptual frameworks and the use of both quantitative and qualitative methods.

Mixed-Methods Research

In keeping with the recommendation of Creswell & Plano Clark (2007, p. 64 and Green et al. (1989, p. 266) for …convergence of triangulation methods in which "quantitative and qualitative methods be different from one another with respect to their inherent strengths and limitations/biases and that both method types be used to assess the same phenomenon," this study employed quantitative and qualitative methods for data collection and analysis to address the stated research questions and constructs. Each method focused to a greater or lesser extent on the overarching and specific questions. The model supported exploration of the extent to which data collected through qualitative research methods supported quantitative results. The data-supported evidence included survey data using Likert-type scale responses amenable to quantification, staff responses to semi-structured interview questions, and field notes gathered during observations of students and staff. Data were categorized and coded using multiple perspectives—first deductively, with predefined categories associated with the study's theoretical framework, and then inductively, in response to findings that called attention to additional important areas of focus. A review of work produced by students during the course of the research study, and informal observations captured in the researcher's journal, supported and enhanced data collected via semi-structured interviews and directed-observation protocols. In support of a convergence model of triangulation, data were coded to allow comparisons among quantitative and qualitative data. Contradictory results are highlighted as process flaws with potential for future research.

Collins, Onwuegbuzie, and Sutton (2006, p. 68), after sharing the roadblocks to mixed-methods research including cost, expertise, etc., suggest that the underlying cause for the dearth of mixed-methods research in the field of special education "is that the rationale and purpose for doing so have not been made sufficiently explicit." In response, they seek to provide a "typology of reasons" which is "operationalized in the context of special education" (p. 69). The authors present the four-dimensional rationale and purpose (RAP) model to demonstrate how mixed-methods investigations may be planned within the context of special education, with the understanding that the model "is applicable for all fields in the social and behavioral sciences [and] . . . is flexible enough to incorporate other design typologies" (pp. 95–96). The RAP model asks the researcher to make four sets of decisions for a mixed-methods research approach: (1) participant enrichment, (2) instrument fidelity, (3) treatment integrity, (4) significance enhancement (p. 90). The table below provides decision responses for the proposed study.

Rationale and Purpose for Use of Mixed Methods

Table 3: Rationale and Purpose for Mixed Methods

Participant Enrichment Understand the study population by acquiring background on the participants pre-project. Understand teacher and support staff	**Study Population** The participants for the study comprised 9th through 12th graders in an alternative therapeutic high school setting. The total population of the high school, grades 9–12, was approximately 150 students in the 2010–2011 school years. **Teaching and Support Staff** Understand teacher and support staff population vis-à-vis the constructs under investigation, approach to instruction of written and oral communications pre-project, and their desire to, and means of supporting, collaboration.
Instrument Fidelity Legitimate Survey—Instrument rationale and validation. Survey pilot. Develop interview and observation protocols aligned to the constructs	**Student Survey** Each component of the survey instrument was validated based on prior studies that used the instruments. A pilot of the instrument was conducted with a small group of students prior to the study. No modifications were made as a result of pilot findings. **Observation and Interview Protocols**

and research questions. Artifact analysis.	Observation and interview protocols focused the researcher's attention on the constructs under study and the primary mediating tool, the WeJay Social Radio Edgeware Gridlet. **Artifact Analysis** A review of student work pre-project provided baseline data as a comparison for during-project writing.
Treatment Integrity Fidelity of evaluating the mediating tool during study	**Fidelity of Tool Evaluation** The activity theory checklist was used to evaluate the fidelity of WeJay as the mediating tool introduced as the "intervention" in the During WeJay project phase.
Significance Enhancement Expansion and verification of interpretation of the quantitative results by obtaining qualitative data from students and teacher.	**Corroboration of Findings** Data collection instruments in the forms of a student survey (quantitative), teacher interviews, student/teacher observation, and artifact analysis will provide data that supports corroboration of findings associated with the constructs under study—self-efficacy, self-regulation, task value, and motivation.

Research Design

The research questions for the study were addressed using a quasi-experimental one-group pretest-posttest within-participants design without a control group.

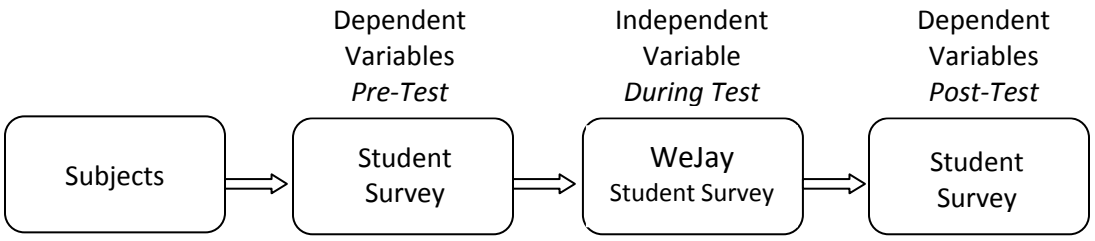


Figure 4: One Group Pretest-Posttest Within-Participants

The study employed quantitative and qualitative methods to collect data pre-treatment, midway through the treatment, and following the treatment. Data collection methods included: (1) a Likert-type scale self-evaluation student survey focused on theoretical constructs, (2) staff interviews in the form of short-response open-ended questions, (3) observations based on field notes, and (4) analysis of staff- and student-generated artifacts.

The population included 9th through 12th grade students. The sample size was limited by the number of students enrolled in the high school program and their decision to participate in the study. Because the students were under 18 years of age, a parent notification letter and student assent letter were provided. Similarly, an educator consent letter was provided for teachers and clinicians who agreed to participate in the study.

The researcher piloted data collection instruments and protocols with a small group of students and teachers who were not part of the study. A small group of nonparticipating students completed the survey instrument and nonparticipating teachers and support staff were interviewed. Additionally, nonparticipating teachers were asked to share artifacts in the form of student written work, teacher grading evaluation rubrics, lesson plans, and strategies used to instruct students in written and oral communications. Only minor modifications (order of questions) were made to data collection instruments and protocols based on these pilots. No amendments to the Institutional Review Board (IRB) application were required.

Quantitative Research

Mertens and McLauglin (2004, p. 69) argue that "Quantitative approaches to research other than randomized or matched experiments have great value for special educators and the people they serve." They further note that "in contexts where experiments are impossible to implement, correlational or descriptive studies can provide valuable insights."

Conroy et al. (2008, pp. 210–211) describe group-design studies addressing emotional and behavioral disorders using quasi-experimental and experimental research approaches that investigate cause-and-effect relationships between interventions and student outcomes. Referring to the work of Van Acker et al. (2004), Conroy et al. note that a group design study is a "multistep process: (a) participant selection, (b) random (if the study is an experiment)

assignment of participants to conditions . . . , (c) exposure to treatment . . . , [and] (d) measurement of outcome variables and analysis of effects."

Qualitative Research

> *The point of legitimizing qualitative, naturalistic research in special education is not to trade one paradigm for the other, nor is it to exchange traditional experimental designs for naturalistic ones in the quest for improving education. Rather, it is to acknowledge the limitations of one methodological orientation or the other for inquiring into particular issues. (Pugach, 2001, p. 449)*
>
> *For people with disabilities and their families, "interpretivism pursues social justice one story at a time" (Ferguson et al., 1992).*

Pugach (2001, p. 445) recognizes the "central actors in qualitative research in special education" to be scholars at Syracuse University. Among these are Biklen, 1985; Bogdan & Taylor, 1975; Taylor, Bogdan, & Lurfiyya, 1995; and Taylor, Bogdan, & Raciono (1991). Bogdan and Biklen (1998) co-authored a text which became a standard methods text used by students in the field of education. According to Pugach, this group had an "enormous impact and influence on the field of special education," but the influence was "felt much more strongly outside of special education particularly since methods texts written by faculty members at Syracuse predated the explosion of methodology textbooks" (p. 445).

Drawing on the work of Ferguson et al. (1992), Pugach (2001, p. 446) argues that qualitative methods are not just an "alternative method for studying disability, the authors point repeatedly to the underlying belief that experience is socially constructed and that our knowledge of disabilities exists within these social constructions." Ferguson notes that this is the key differentiator of qualitative and quantitative research and that it is "precisely what makes qualitative research so powerful for the study of disability." Echoing Ferguson's work,

Brantlinger, Jimenez et al. (2005, p. 198) suggest that qualitative research is a rigorous approach to research which involves empiricism, knowledge production, particular research skills and tools, production of scientific evidence, and coherent articulation of results. They further note that qualitative research contributes to the fields of special education and disability studies by capturing involved people's perspectives, improving our understanding of discourses that shape social life in schools and society, and informing policymakers and practitioners. A list of credibility indicators and quality indicators which are applicable beyond the context of special education are shared.

Delineated in Pugach (2001, p. 446), Ferguson et al. (1992) describe three ways of viewing research on disabilities through the lens of qualitative research:

- First, they emphasize the role of qualitative research in "telling different stories" (p. 296). They stress that disability is a social construction; by this they mean that the experience of disability is socially constructed, and also that in order to understand disability, it is necessary to be open to the full context and experience of the lives of individuals with disabilities.

- Second, they argue that the paradigm "not only urges us to ask different questions, it also prompts us to ask questions differently" (p. 297). By this they are referring to the challenge of capturing the life experience of individuals with profound disabilities, who may not be able to tell their own stories but whose stories can be observed and related. In addition, they emphasize the importance of listening to well-written stories about individuals with disabilities.

- Finally, they note that this paradigm enables us to consider "telling stories together" (p. 299), that is, to engage in collaborative forms of research that connect the multiple perspectives of the insider (in this case, the individual with a disability) and the outsider (the researcher, who may or may not have a disability) in a delicate collaboration and balancing act.

This study included one form of quantitative data collection (a four-part student survey) and three forms of qualitative data collection (observation, semi-structured interviews, and artifact analysis). Each is described in detail under Data Collection.

Research Site and Participant Selection

> *"We believe the WiGiT project offers an excellent opportunity for collaboration among our music and content-area teachers to support curriculum integration," said the principal of the high school. "We also believe that this collaboration and curriculum integration will provide a motivating environment for our students to use their passion for music as a springboard for inquiry-based research in the content areas." (iSchool News, 2011)*

Disabilities are considered in several broad categories, each of which presents unique research challenges. The National Dissemination Center for Students with Disabilities (NICHCY) identifies fourteen categories of disabilities associated with the federal Individuals with Disabilities Education Act (IDEA) (Appendix H). IDEA guidelines mandate Preschool–12th grade accommodations that are defined for students through their Individualized Education Plans (IEP)[7]. Colleges and universities provide services to students with disabilities as well. An example of the nine categories defined by Johns Hopkins is included in Appendix I.

Approximately 25% of students with learning disabilities drop out of high school. Of these, 44% of those with emotional disabilities drop out. This is the highest rate of all disability categories (U.S. Department of Education 2005).

Statistics compiled by the Center for Education Equity (2005) on high school dropouts include the following: (1) they earn about $260,000 less over a lifetime than high school graduates and pay about $60,000 less in taxes. (2) They have a life expectancy 9.2 years less than that of high school graduates. (3) A one-year increase in average schooling for dropouts

[7] Students who do not qualify for an IEP may qualify for a Section 504 Plan that addresses minor but recognized disabilities that impact access to curriculum and also require schools to provide individual plan-defined accommodations.

would reduce murder and assault by almost 30 percent, motor vehicle theft by 20 percent, arson by 13 percent, and burglary and larceny by about 6 percent. (Appendix J)

The students in this study are classified primarily with emotional and behavioral disabilities (EBD), Asperger's syndrome[8]*, and learning and intellectual disabilities which interfere with their ability to access the regular curriculum in their district school settings. In the fall of 2010, a new therapeutic high school was put in place* with the goal of providing a high school experience comparable to that of students in countywide high schools. The vision was to create a program rich in creative arts, music, and technology whereby students' strengths could be infused with their interests, thus maximizing their motivation and their potential to tackle a curriculum concomitant with their abilities. Additionally, an enhanced clinical model attends to individual learning styles, social skills development, and transition planning.

Teacher and support-staff participants were identified in three ways: (1) by the researcher based on prior work with staff members on technology integration efforts at the high school; (2) by the principal, who was eager to enrich the writing opportunities for students across the curriculum; and (3) by the director of special education services, who was familiar with all staff and recognized a fit between the proposed research and teaching and support staff. A common goal was to identify options to address weakness in writing and oral communications and to provide cross-curricular writing opportunities.

Participant Enrollment and Attrition

Nine staff and twenty-seven students expressed interest and were enrolled. Staff identified students who they felt were a good fit for the study and encouraged them to join.

[8] Doctors group Asperger's syndrome with other conditions that are called autistic spectrum disorders or pervasive developmental disorders. These disorders all involve problems with social skills and communication. Asperger's syndrome is generally thought to be at the milder end of this spectrum. (Mayo Clinic - http://www.mayoclinic.com/health/aspergers-syndrome/DS00551)

Student participants were assigned a Hawk Reporter name to protect identify, e.g., Hawk1-Hawknn, which they used for their WeJay logins and radio-show names. Each study member received and completed Institutional Review Board (IRB) forms required for participation. Parents and guardians were informed by mail that their child had enrolled in the project. The letter described the project in detail and provided an option to contact the researcher to get more information as well as an option to opt out of the project. No one opted out and no one contacted the researcher.

The following table provides an overview:

Table 4: Participant Enrollment & Attrition

Pre-WeJay: October 2011–January 2012

- 9 staff (teachers & clinicians) enroll
- 28 students enroll
- 26 students completed the Pre-WeJay Survey

During WeJay*:* January 2012–March 2012

- 24 students moved to During WeJay
- 19 students completed the During WeJay Survey

Post WeJay: April 2012–May 2012

- 16 students complete the Post-WeJay Survey

Across All Phases

- 15 of the 16 students completed the Pre-, During, and Post- Survey

Research Questions

This research study investigated the overarching research question*: Does a wireless grids implementation of a social radio station in a therapeutic high school setting support the development of perceived self-efficacy and self-regulation associated with written and oral communication skills?*

This research study investigated the following specific research questions. As students engage as managers and contributors to the WeJay Social Radio Edgeware Gridlet, does interaction in the networked environment support the development of students':

a. Perceived self-efficacy associated with written and oral communication?

b. Academic self-regulation associated with written and oral communication?

c. Emotional self-regulation associated with written and oral communication?

Unit of Analysis

Trochim (2006) argues that "One of the most important ideas in a research project is the *unit of analysis*." The unit of analysis refers to the "entity"—the "what" and/or "whom" is measured in the study. Babbie (2010, p. 98) notes that "In social research, there is virtually no limit to what or whom can be studied, or the unit of analysis." Examples of units of analysis include individuals, groups, artifacts (lesson plans, scripts, radio shows, musical scores), geographical units (cities, towns, states), institutions (public schools, private schools, alternative schools), and social interactions (collaborative writing, interviews).

The *main unit of analysis* for this study is evident when we consider the overarching research question: *Does a wireless grids implementation of a social radio station in a therapeutic high school setting support the development of perceived self-efficacy and self-regulation*

associated with written and oral communication skills? In this study the researcher was interested in a particular group of students, those who attend a therapeutic high school, and the impact of a particular tool on perceptions and behaviors of those students vis-à-vis the constructs under investigation—self-efficacy and self-regulation related to communicative competencies. As such, the unit of analysis is specifically the perceptions and behaviors of individuals.

The study also considered *embedded units of analysis*, each providing data that addressed the overarching and specific research questions through the lens of the stated constructs. The embedded units of analysis are highlighted in the Methodological Process Flow diagram (Appendix D), and they include instruction, artifacts, activity interactions, and WeJay.

Quantitative Data Collection

The quantitative component of this study involved a student survey which was administered pre-project, during the project, and again post-project. The goal was to determine if there was a statistically significant relationship between implementation of WeJay Social Radio Edgeware Gridlet and the constructs under study vis-à-vis these tasks.

Student Survey

The student survey represents a modified version of four validated survey instruments that measure perceived self-efficacy generally, for writing and oral communication skills specifically, and for self-regulation in writing. The survey was administered at three points during the research process—pre-WeJay, during WeJay, and post-WeJay. The survey addressed the following constructs: general self-efficacy, self-efficacy, and self-regulation related to writing and speaking. Survey items remained constant for each administration, however the directions read to students prior to completing the survey addressed the context of the study, i.e.,

"considering your high school experience thus far," "considering your participation in WeJay," "now that you've participated in WeJay". The Student Survey Instrument is included in Appendix E.

The pre-WeJay survey administration provided baseline data and a reference point to triangulate data collected via observation, staff interviews, and artifact analysis. The findings also provided a baseline for addressing the study's overarching and specific research questions regarding WeJay's impact on participation and communication in a social networked environment. The during-WeJay and post-WeJay administrations provided comparative data as well as a source for triangulation of pre- and post- staff interviews, observation, and artifact analysis.

Each section of the survey used in this study, along with the rationale for modifications from the original surveys from which it was constructed, is described below. The original surveys are included in Appendices K–N.

Section 1: The New General Self-Efficacy Scale. Chen, Gully, and Eden (2001, pp. 62–63), referring to Bandura (1986, 1997) in noting that "most researchers have limited their research to the magnitude and strength dimensions, conceptualizing and studying self-efficacy as a task-specific or state-like construct," suggest that measures of situational self-efficacy (SSE) neglect the "trait-like" self-efficacy measures associated with general self-efficacy (GSE). GSE addresses individuals' perceptions regarding their ability to successfully tackle tasks across domains in varied situations and contexts. Chen et al. further note that Bandura (1997) recognized the importance of self-efficacy beyond "situational demands":

> *Powerful mastery experiences that provide striking testimony to one's capacity to effect personal changes can also produce a transformational restructuring of efficacy beliefs that is manifested across diverse realms of functioning. Such personal triumphs serve as transforming experiences. What generalizes is the belief that one can mobilize whatever effort it takes to succeed in different undertakings. (p. 53)*

Chen et al. provide validation evidence for the New General Self-Efficacy (NGSE) and refer to the Chen, Gully, et al. (2000) study that "demonstrated that the NGSE scale consistently relates to learning SSE over and above cognitive ability, goal orientation, state anxiety, and previous performance." (Chen, 2001, p. 79)

Charles, Yochi, and Michael (2006) corroborated the construct validity of NGSE in a comparison of three measures of General Self-Efficacy (GSE): Sherer et al.'s 1982 General Self-Efficacy Scale, Schwarzer and Jerusalem's (1995) General Perceived Self-Efficacy Scale, and Chen et al.'s (2001) New General Self-Efficacy Scale.

> *The findings of this study further demonstrate the value of GSE as a construct that contributes to both science and practice. The items and responses to the items on all three measures of GSE demonstrate acceptable psychometric properties, and items on Chen et al.'s (2001) measure [NGSE] displayed the most desirable properties of the three. (p. 1059)*

Here it is suggested that successful participation in social networked environments benefits from context-specific skills as well as the general self-efficacy traits delineated in the NGSE instrument. Incorporation of this scale supports investigation of the relationship between student general perceived self-efficacy and skill-specific responses. It also provides another source of information that enables staff to support student participation in the social-networked

environment for this study. The original New General Self-Efficacy Survey (Appendix K) was included in Section 1 without modifications.

The items for this scale are graded with a five-tier Likert scale: 1–Strongly Disagree, 2–Disagree, 3–Undecided, 4–Agree, 5–Strongly Agree.

Section 2: Self-Efficacy in Writing Scale (SWS). Pajaras, Johnson, and Usher (2007, p. 105) note that while studies have shown a relationship between writing self-efficacy and writing achievement, writing self-efficacy has received "modest attention" in the research literature. The authors argue that "this is a noteworthy omission given the foundational status of writing in the academic curriculum, the acknowledged importance of writing skills to students' academic success, and the strong relationship typically reported between writing self-efficacy beliefs and students' writing performances and achievement." (p. 109)

Considering the key sources that influence self-efficacy beliefs noted by Bandura (1997), Pajares et al. (2007, p. 104) found that "perceived mastery experiences accounted for the greatest proportion of variance in writing efficacy. This was the case for girls and for boys, as well as for students in elementary school, middle school, and high school." Mastery is interpreted through factors such as measurements against external criteria including what others say, past successes and failures, and goal achievement. Referring to Calkins' (1994, p. 106) attention to goal achievement, it by Pajaras is suggested that, "Students who perceive their writing as instrumental in accomplishing goals may also perceive their writing performance as successful."

The Self-Efficacy in Writing Scale (SWS) used in Section 2 of the student survey is adapted from the Yavuz-Erkan (2004) survey that was based on a self-efficacy construct proposed by Bandura (1977). The SWS is "intended to grade the strength of subjects' belief in

their writing ability." The survey focuses on students' self-assessment of their ability to respond to writing prompts, incorporate appropriate vocabulary, develop a cogent argument that presents the writer's point of view, and employ proper grammar and structure for the writing task. Each question begins with the words, "I can . . ."

This research investigated how student survey responses on SWS align to staff interview responses regarding student writing proficiency and to actual student writing samples (artifact analysis). The pre-project responses were compared to the during-project and post-project survey administrations. Student responses to the pre-project administration of the survey provided another source of information that enabled staff to support student participation in the WeJay Social Radio Edgeware Gridlet.

Based on input from nonparticipating staff, a psychologist, and the principal of the high school, the original Self-Efficacy in Writing Scale (SWS) (Appendix L) incorporated in Section 2 was modified to reduce the number of questions posed and to eliminate questions that were not relevant to the writing curriculum. For example, Question 14, "I can use the punctuation correctly" was eliminated while Question 15, "I can edit my compositions for mistakes such as punctuation, capitalization, and paragraphing," was kept. Question 19, "I can use connectors correctly to make my composition a better one," was eliminated because "connectors" represents unfamiliar terminology. Additional modifications are highlighted in Appendix L.

The items for this scale were graded with a four-tier Likert-type scale: 1–I do not do it well at all, 2–I do not do it well, 3–I do it well, 4–I do it very well.

Section 3: Self-Regulation in Writing Scale. The Self-Regulation in Writing Scale for Section 3 is adapted from the research of Ma, Kanlapan, and Velaxco (2009). The authors

developed the self-regulation contextualized in written communications skills scale by drawing on the work of Zimmerman's (2002) eight-category self-regulatory process lens. The scale was administered to 300 male and female college students aged 18 to 22 enrolled in various academic programs in different universities in Manila, Philippines. Analysis of survey results indicated a high internal consistency (.94) among the responses for the whole scale. All eight subscales correlated with each other. A confirmatory factor analysis revealed that "self-regulation is better concretized if it is divided into its three-stage cycle, namely: (1) forethought phase, (2) performance phase, and (3) reflection phase" rather than the original eight-stage model of self-regulation. (p. 87)

The scale adapted for Section 3 of the student survey for the proposed research incorporates 38 of the 98 questions in the original scale and reflects the three-stage cycle model: (1) Planning My Writing (11 questions), (2) During Writing (16 questions), and (3) Reflecting on My Writing (11 questions).

The rationale for reduction and selection of items from the original Self-Regulation Scale Conceptualized in Writing (Appendix M) included the following: (1) restructuring of the eight-stage model to a three-stage model eliminated fifteen questions that were repeated verbatim in stages 1 and 3 of the eight-stage model; (2) questions relevant to students at the college level were not included; (3) desire to reduce the number of questions addressing a similar skill or focus; (4) in the context of this study, students completed entire writing assignments in class and during enrichment sessions, thus several questions addressing student decisions relating to self-regulation associated with time management—scheduling writing times, maintaining a writing calendar, watching television during writing—were not relevant context or situation. Asked what

percentage of writing students completed independently as homework assignments, the principal noted that:

> *The answer is very little without direct support, which is why we have six resource periods in the week. Years ago we added it because many of our students are not able to work at home due to lack of support, resources, or supervision as well as their disabilities. Most written assignments are done in school with supports either academic or clinical. (High School Principal)*

This research investigated how student survey responses to the self-regulation questions aligned to staff interview responses regarding student self-regulation. The pre-WeJay responses were compared to the during-WeJay and post-WeJay survey administrations. Student responses to the pre-WeJay administration of the survey provided another source of information that enabled staff to support student self-efficacy and self-regulation in writing and oral communications as they participated in the WeJay Social Radio Edgeware Gridlet.

The items for this scale are graded with a four-tier Likert-type scale: 1–Never, 2–Sometimes, 3–Often, 4–Always.

Section 4: Self-Efficacy in Oral Communications. The Self-Efficacy in Oral Communications Scale for Section 4 of this survey was selected from a three-part student survey of 21st-century skills developed by Huang, Leon, Hodson, La Torre, Obregon, and Reviera (2010). Huang et al.'s scales were selected or adapted from the following established scales: Form A of the Communication Attitude Test (Bruten, 1985), the Student Attitudes Toward Group Environment questionnaire (Kouros & Abrami, 2006), and Bandura's Children's Self-Efficacy Scale (2006).

> *This study addressed key questions about LA's BEST afterschool students' self-efficacy, collaboration, and communication skills. We compared student perceptions of their own 21st century skills to external outcome measures including the California Standardized Test (CST), attendance, and teacher ratings. (p. 1)*

The study showed "a substantial relationship between student self-efficacy compared to student oral communication and collaboration skills. The Cronbach's alpha for the 24 items concerning oral communications [was equal to] 0.807" (p. 15). Only one item ("I don't talk right") included in the original Self-Efficacy in Oral Communications (Appendix N) was eliminated from Section 4 of this study's survey. The researcher felt the wording of the question was awkward and inappropriate for students in high school.

The items for this scale are graded with a four-tier Likert-type scale: 1–Always True, 2–Mostly True, 3–Mostly False, 4–Always False

Qualitative Data Collection

Qualitative data collection took place over the course of the project. Data were collected using semi-structured interviews, open-ended interviews, participant observation, journaling, and analysis of student work (reports, text scripts, and music recordings). Interpretive analysis was conducted to develop thick descriptions for the constructs under study. These descriptions were triangulated with the student-survey quantitative data.

Semi-Structured Interviews—Staff

Fontana and Frey (2000) describe semi-structured interviews as "one of the most powerful ways in which we try to understand our fellow human beings" (p. 645). Kvale and Brinkmann (2009) suggest that interview design begins at the first conceptualization of the

investigation (thematizing stage) wherein the researcher determines the purpose and theme of the investigation. The study is designed based on an explicit statement of purpose—the "why" of investigation. A clear purpose guides the development of an interview instrument that addresses research questions and constructs. The researcher's philosophical beliefs suggest that meaning is derived from understanding why individuals and groups behave the way they do. A well-defined interview process and an interview instrument that incorporates open-ended questions will facilitate interaction that embraces the interviewees' stories. The interviewer will guide the conversation rather than over-controlling, interrupting, or posing leading questions.

For this research, interviews were used to gather descriptive information aligned to the overarching and specific questions considered through the lens of constructs associated with the study's theoretical and conceptual frameworks. In addition to basic demographic information (e.g., staff position, years of experience, education, age), the interview protocol focused on staff support for general self-efficacy; self-efficacy and self-regulation associated with writing and oral communications; and provision of opportunities for student collaboration around communicative processes. Teachers and support staff (social workers and psychologists) who work in this therapeutic high school setting are familiar with the constructs of self-efficacy and self-regulation, thereby allowing the researcher to ask questions using these terms in the interview protocol. Two examples of questions used in the staff interview protocol for this study are "What methods are used to support student writing self-efficacy?" and "What methods are used to support writing self-regulation?" The Staff Pre-WeJay Interview Protocol is included in Appendix F.

Pre-WeJay semi-structured interviews were conducted in the media center and lasted from 30 to 45 minutes. The interview questions focused on staff perceptions of student

knowledge and skills (writing and oral communications); role of staff in supporting writing and oral communications skills; role of staff and methods employed to support collaboration skills; methods employed to support and build student general self-efficacy; methods employed to build student writing and speaking self-efficacy; methods employed to support and build general self-regulation; methods employed to support and build writing self-regulation; and staff attitudes toward and experience with social networking and perceived challenges with social networking.

Observation of Staff & Students

As Denscombe (2010, p. 211) notes, the researcher should "fit in easily and comfortably without disturbing the naturalness of the setting." Observation as a method of gathering data is aligned to the conceptual framework for this study, activity theory, as it stresses the relationships and the connections amongst the players, tasks, and tools that comprise the contextual and situational factors of the system under study. Denscombe suggested that when observation is employed:

> *Emphasis is placed on holistic understanding, in which the individual things being studied are examined in terms of other relationships with other parts, and with the whole event or culture. And, in similar vein, things are examined in relation to their context. (Denscombe 2010, pp. 206–207)*

Pre-WeJay formal observations afforded the researcher an opportunity to visit and observe teaching staff participants interacting with students during a classroom lesson. Teachers selected the lesson they wished to share and set the meeting time with the researcher, who accommodated all requests. The researcher audio-recorded the full lesson and transcribed the recording. The Observation Protocol is included in Appendix G.

Students were observed and audio-recorded as a part of the classroom activity. The focus of observations included interactions of teachers and students during specific curriculum-related lessons—English, social studies, science, music, and math. The entire lesson was recorded, and follow-up analysis focused on constructs associated with the study research questions—self-efficacy and self-regulation and the related constructs of task value and motivation. The observation protocol provided side-by-side "tickler" columns to ensure that the researcher tended to both the constructs and the mediating tool. Additional areas of interest emerged during analysis of observation transcripts. Category codes were added inductively to capture these areas. The researcher collected artifacts associated with the lesson. Student names were removed and students were given the opportunity to opt out of sharing, but none did.

Observation Journal

The researcher maintained a journal throughout the study which documented observations of student-mentor interactions, collaborations, interactions with WeJay and complementary technologies, radio shows created, etc. Journal entries were not coded.

Open-Ended Interviews—Staff

Open-ended staff interviews took place at the culmination of the During WeJay phase of the study. The interviews were conducted one-on-one in the media center and lasted between 20 and 30 minutes. The same broad question was posed to each staff participant. (Appendix F)

WeJay Interaction and Evaluation

Activity theory (AT) proposes that individuals and groups engage in tool-mediated activities in particular historical and situational contexts which influence the structure of the AT framework. The AT model allows the researcher to systematically and visually document

components of an activity. Its purpose is not to prescribe the best structure, but to capture current reality with the understanding that evolution of one or more components of the model is expected as individuals and groups interact to achieve desired outcomes. Indeed the model proved useful in pinpointing contradictions between current paradigms and more efficacious means to meet objectives. The model informed decisions to alter the study environment to address issues regarding student and staff participation—time constraints, and staff and student day-to-day responsibilities.

Throughout the project, the efficacy of WeJay as a mediating tool was evaluated in relation to its motivating influence and as a technology whose feature set facilitated creation of radio programming, sharing, collaboration, and socialization around this programming. Where WeJay's available features fell short, complementary tools were identified to fill gaps required to fully realize the objectives of the activity as envisioned by students and staff, i.e., to make radio shows persistent and available to a wider audience.

Data collection and analysis at each phase of the project provided next-step, actionable insights, allowing the AT model components to be modified over the course of the study and affording the most efficacious environment to accomplish the outcomes and fulfill the objectives of the activity. These modifications are discussed in relation to each phase of the project.

Student Work

Student writing artifacts produced as part of the music, English, science, math and/or social studies curriculum represented student writing completed before implementation of WeJay. Student radio-show artifacts (writing and audio files for radio shows) were also collected. Radio shows were uploaded to SoundCloud for sharing persistently within the high school, all of BOCES, and anyone who had the link. Hawk names were used to ensure privacy,

and no references to the high school were included. (Approaches to analyzing student work are described under Artifact Analysis and Interpretation.)

These methods of gathering data were aligned to the conceptual framework for the study, activity theory, as it stresses the relationships and the connections among subjects, tasks, tools, and outcomes, which comprised the contextual and situational factors of the systems (Wireless Grids Technology and WeJay Social Radio) under study. The following table details the data collection methods, rationale, and expected outcomes for the study.

Data Collection Summary Chart

Table 5: Data Collection Summary Chart

Data Collection Method	Rationale	Purpose	Outcomes
STUDENT SURVEY—Appendix E			
Student Survey Pre- , During & Post-WeJay	A student survey instrument was used to evaluate general perceived self-efficacy; self-efficacy related to written and oral communications; and self-regulation related to written communications. The survey instrument was administered pre-WeJay implementation, during WeJay interaction, and approximately two weeks after culmination of the WeJay project.	The survey instrument enabled the researcher to collect data on student perceptions associated with the constructs under consideration in this study. The surveys are based on Likert Scales, which support quantitative statistical analysis. The survey instrument is based on validated surveys associated with the constructs under consideration.	The survey provided data to support the quantitative component of this mixed-method study—t-test comparison of pre-, during, and post-project survey administration data collection. This quantitative data supported triangulation with data collected via observation, artifact analysis, and teacher interviews.
ARTIFACT ANALYSIS			
Staff Artifact Analysis	A review of lessons, unit plans, feedback, and evaluation criteria associated with cross-curricular writing projects (English, social studies, science, math, and music) enabled the researcher to see how the instructional approach and staff support provided pre-WeJay compared to that provided during WeJay. The researcher attended to examples of support for	The plans outlined in the documents were compared to pre-WeJay observation of instructional practices and to the reality of practice vs. the ideal documented plans.	This qualitative source of evidence supported interpretation of findings and triangulation with data collected in student surveys, staff interviews, and during observation.

Data Collection Method	Rationale	Purpose	Outcomes
	perceived self-efficacy and academic self-regulation related to writing as part of this analysis.		
Student Artifact Analysis Pre- & During WeJay	Two sources of information associated with student writing and oral communications were reviewed prior to implementation of WeJay. These artifacts allowed the researcher to have pre-WeJay exemplars of student work for comparison with similar documents created and graded during WeJay. 1. Samples of graded cross-curricular student writing (English, social studies, science, and music composition). 2. Standardized and in-class assessments associated with writing and oral communications.	These teacher-evaluated exemplars of student work were compared to student perceptions associated with student survey responses pre-WeJay and with documents and oral performances produced during WeJay participation.	This qualitative source supported triangulation with data collected in student surveys, staff interviews, and observations.
STAFF INTERVIEWS—Appendix F			
Pre-WeJay Staff Semi-Structured Interviews	Context for the study: Set a context for the study in terms of researcher, student, and staff roles. Provided an overview and demonstrated WeJay Provided an overview of the theoretical and conceptual lens for this study—social cognitive theory with a focus on self-efficacy and self-regulation and activity theory as a lens to understand the interaction of staff and students as they engaged with WeJay to produce radio shows. Open-ended questions regarding staff approach to supporting self-efficacy and academic self-regulation in writing and oral communications.	Relationship between researcher, staff and students was defined and ethical dimensions of research were ensured. Identified current methods employed by staff to support students in relation to written and oral communications using a lens of the constructs under consideration for the theoretical framework of this study.	The context of the study and the relationship of the researcher were understood. The researcher had a baseline for understanding how staff supports students in acquiring written and oral communication competencies. Data collected during the interview addressed the constructs under investigation. This baseline data collection provided a point of comparison for the during-project context.
During & Post-	Open-ended questions	Identified “extended” and/or	Data collected

Data Collection Method	Rationale	Purpose	Outcomes
WeJay Staff Open-Ended Interviews	regarding staff approach to supporting self-efficacy and academic self-regulation in writing and oral communications during WeJay.	"new" methods employed by staff to support students academically and emotionally in relation to written and oral communications.	facilitated comparisons to pre-project perceptions and support.
	The post-WeJay interview incorporated open-ended questions which allowed staff to reflect on the project as a platform to support student writing and oral communications and as a platform for staff to support students in developing self-efficacy and academic self-regulation associated with these skills.	The interview provided a source of evidence based on staff thoughts at the end of WeJay implementation. Staff participants were asked to reflect on their perceptions of WeJay as a platform to support students in developing perceived self-efficacy and self-regulation associated with the writing process and oral presentation skills. They were also asked to talk about the environment as another opportunity to support students and to create a positive space for peer interaction.	Data collected allows a comparison to pre-project and during-project perceptions and support.
Staff Informal Clarification Interviews	Informal interviews were conducted during the course of the study to address technical or contextual issues associated with process and technology issues.	These informal interviews will allow the researcher and staff to address issues which may require readjustments for smooth operation of the technology, modify activity theory Nodes associated with rules and roles, etc.	Smooth operation of technology, researcher-staff interaction during the research process.
DIRECT OBSERVATION PROTOCOL—Appendix G			
Pre-WeJay Direct Lesson Observation	The pre-WeJay observation was guided by teacher formal classroom lesson observations taking note of student activity, interaction with staff, resultant written artifacts, music composed, and oral presentations. Observation attended to activity and exchanges associated with the research questions and the constructs under study, self-efficacy, self-regulation, and task value.	The transcripts of the classroom activities provided another qualitative source of evidence for triangulation with survey data, interview data, and artifact analysis data. The observations enabled the researcher to capture exchanges among students and staff during the writing process. The researcher considered a combination of verbal interchanges with observations of behavior, context, and discussion with the goal of further analysis associated with the constructs being studied. The resultant descriptions	Supported triangulation of qualitative and quantitative data collection to better address the research questions. Provided thick descriptive data, which was used to tell a qualitative story that addressed the research questions. Allowed the researcher to report on what "happens" and actual exchanges—verbal and non-verbal—with what is "said" through

Data Collection Method	Rationale	Purpose	Outcomes
		contributed to the triangulation of data process.	collection of survey and interview data. It is understood that this reporting was based on the researcher's interpretive understanding of the context and situation.
OBSERVATION PROTOCOL - Appendix G ACTIVITY THEORY CHECKLIST– Appendix X			
During WeJay Observation using an activity theory checklist approach	Non-participatory observation took place in the high school media center, classrooms, and the music room. During WeJay, observation was guided by the activity theory conceptual framework with attention to the research questions and the constructs under consideration. Observation illuminated interactions and behaviors associated with the constructs under study during the writing process, music composition, and in oral presentations.	Observations enabled the researcher to capture exchanges between students and staff during the writing process. The researcher was able to see and hear students and their mentors as they discussed ideas for programming the radio station, made decisions about specific content to be presented, collaborated during the writing process, etc. Both whole-group and small-group conversations provided contexts for observation. The researcher used verbal exchanges, observations of behavior, context, and student-mentor discussion with the goal of further analysis associated with the constructs being studied.	The researcher's journal documented media center WeJay activities, providing another qualitative source for triangulation with survey, interview, lesson observation, and artifact data.

Staff & Student Data Collection Snapshot

Tables 6 and 7 provide an overview of staff and student participants and data collection instruments administered. As noted, the study began with 27 students in the Pre-WeJay phase, with an additional student being enrolled in the During WeJay phase per the request of a teacher. Over the course of the study, 12 students dropped out, 3 did not produce a show, and others did not complete surveys for reasons noted in Table 7.

Table 6: Staff Data Collected

Staff Data Collected					
	Pre-WeJay			During WeJay	
Staff Code	**Structured Interview**	**Lesson Observation**	**Lesson Plan Artifact**	**Observation & Open-Ended Discussion**	**Open-Ended Interview**
4978	Y	N/A	N/A	N	Y
7529	Y	Y	Y	Y	Y
3615	Y	Y	Y	Y	Y
1823	Y	N/A	N/A	Y	Y
1623	Y	Y	Y	Y	Y
2535	Y	Y	Y	Y	Y
8715	Y	Y	Y	Y	Y
5087	Y	NA	NA	Y	Y
2903	Y	Y	Y	Y	Y

Table 7: Student Data Collected

Student Status and Data Collected							
EA-Excessive Absences **LP**-Left Program **CI**-Clinical Issues **R**-Refused **MS**-Mentor Support Issues **NS**-No Show **ITM**-Played Music From iTunes Account **EDW**-Enrolled in the During-WeJay Phase ***Hawk 19** worked with 2 mentors							
			Pre-WeJay		During WeJay		Post WeJay
Mentor	**Student**	**Grade**	**Survey**	**Artifacts**	**Show & Artifact**	**Survey**	**Survey**
2903	Hawk30	11	Y	Y	N; NS	Y	Y
	Hawk7	10	Y	Y	Y	Y	Y
	Hawk8	11	Y	Y	Y	Y	Y
7529	Hawk9	12	Y	Y	N; ITM	Y	Y
	Hawk10	10	Y	Y	Y	N - LP	
	Hawk11	11	Y	Y	N; ITM	Y	N - LP
2535	Hawk12	9	Y	Y	Y	Y	N - CI
	Hawk13	12	Y	Y	Y	Y	Y
	Hawk14	12	Y	Y	Y	Y	Y
3615	Hawk15	12	Y	N - R	Y	N - R	N - R
	Hawk16	10	Y	N - R	Y	N - R	N - R
	Hawk17	12	Y	N - R	Y	N - R	N - R

8715	Hawk18	10	N-EDW	Y	Y	Y	Y
	*Hawk19	12	Y	Y	Y	Y	Y
	Hawk20	12	Y	Y	Y	Y	Y
1623	Hawk21	11	Y	Y	Y	Y	Y
	Hawk22	11	Y	Y	Y	Y	Y
	Hawk24	9	Y	Y	Y	Y	Y
4978	Hawk23	10	Y	N-MS			
	Hawk25	12	Y	Y-MS			
	Hawk26	11	N-LP				
5087	*Hawk19	12	Y	Y	Y	Y	Y
.	Hawk27	9	Y	Y	Y	Y	Y
	Hawk28	11	Y	Y	Y	Y	Y
1823	Hawk29	12	Y	Y	Y	Y	Y
	Hawk31	10	Y	Y	Y	Y	Y
	Hawk32	10	Y	Y	N; EA	Y	N-LP
	Hawk99	12	Y-LP				

Method Flow, Study Phases, and Data Collection Points

Having framed the study, provided a rationale for using a mixed-methods approach, described the research site, participants, and unit of analysis, a Method Flow Diagram was developed to visually describe the relationship, timing, and context of the study phases and data collected within those phases (Figure 5). Referring to the Method Flow Diagram as a guide, each phase of the study is summarized with a focus on purpose, context, process, and reference to the data collected. Following this section the researcher provides a detailed description of quantitative and qualitative data collection and analysis.

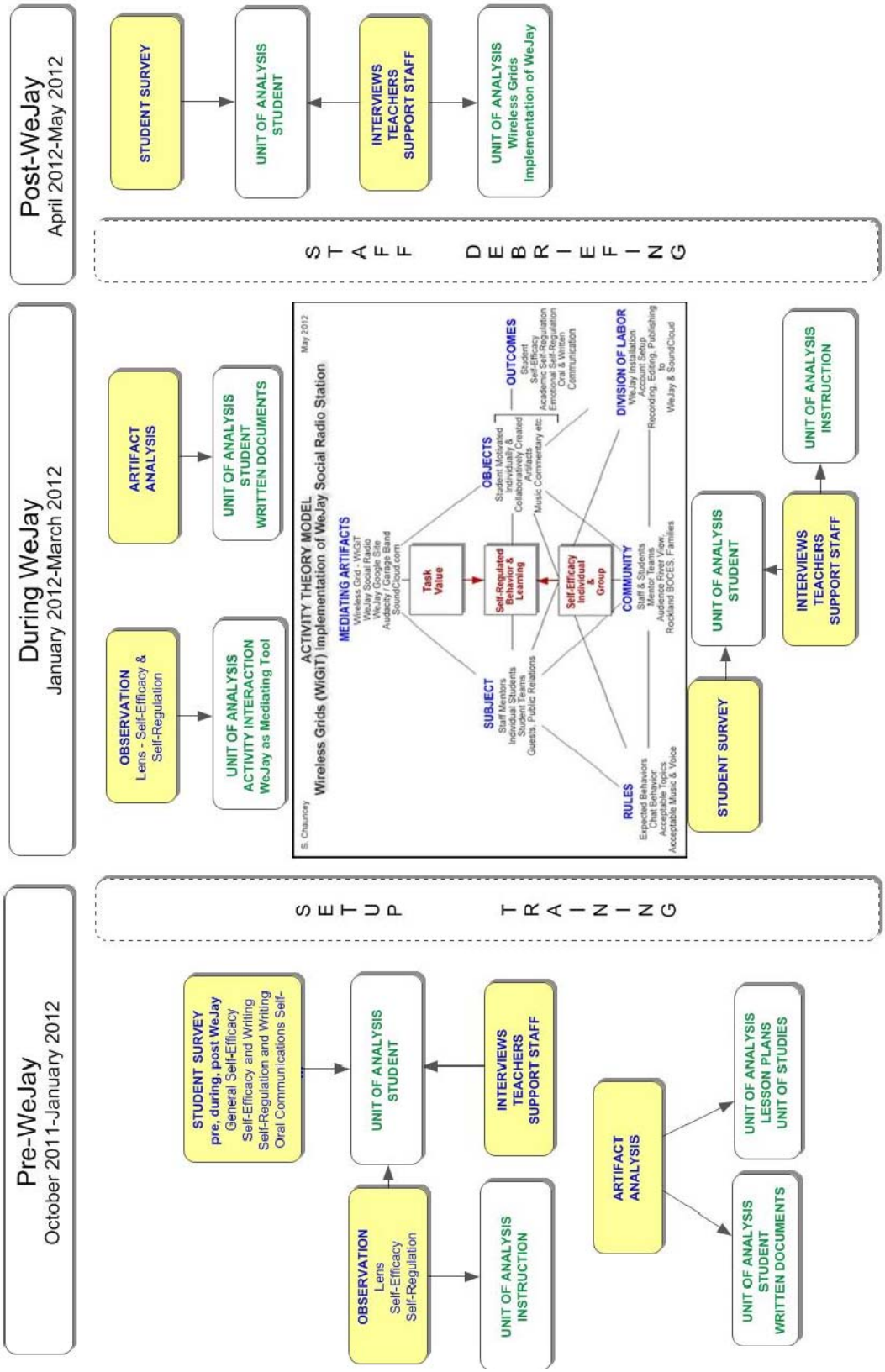
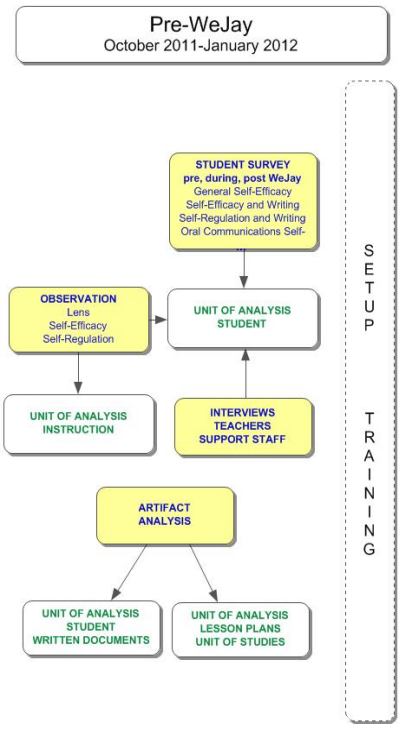


Figure 5: Methods Flow Diagram

Pre-WeJay—October 2011—January 2012



Pre-project training was conducted to familiarize staff with the WeJay platform and interface. The staff, with researcher support, presented WeJay to students. Teachers and clinicians were also introduced to Google Sites, Google Docs (used to share and store in-process student work), and other supportive technologies used to support activity goals and objectives.

A screencast describing WeJay as a social radio station emerging from work in the Wireless Grids Lab in the iSchool at Syracuse University was shared with students and staff, who were told that theirs would be the first high school to beta test WeJay. They were also told that their input would provide direction for product enhancements. This presentation was repeated several times over the course of three days to expose all students and staff to the project and recruit those who were interested. With the advice of the school principal, the study was designated to take place during a seventh-period enrichment block.

Hawk's Nest Newspaper & Radio Google Site. One staff participant taught an elective English course in which students produce a monthly newspaper that is distributed to the high school staff and students and to BOCES central office staff. One of the student participants was in this course and had created a hand-drawn mascot for the newspaper. The researcher spoke with the teacher and student and asked if he would be interested in creating a Google Site which would include both a digital copy of the newsletter and student radio-show productions. The

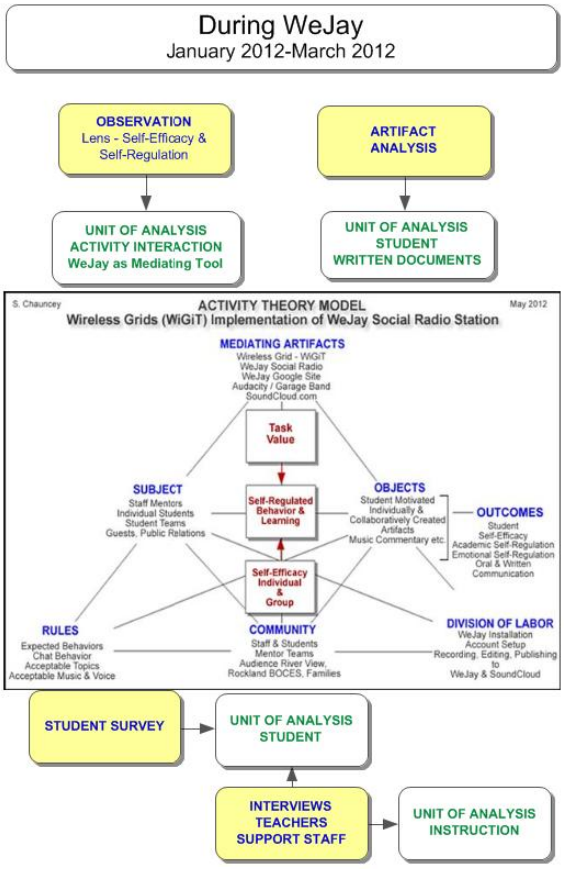
researcher offered to work with the student to show him how he could digitize and colorize his drawing. The Hawk's Nest became the focal point for both projects and was considered another mediating tool in the activity theory conceptual framework. (http://tinyurl.com/TheHawksNest)

Figure 6: Hawk's Nest Radio Mascots

The semi-structured interview and observations conducted during the Pre-WeJay phase of the study provided the researcher with a baseline for understanding how staff supported students in achieving written and oral communication competencies. It also elucidated methods staff employed to support self-efficacy and academic and behavioral self-regulation generally and in relation to writing and oral communications. This baseline data provided a point of comparison for During-WeJay and Post-WeJay phases.

In addition to responding to the semi-structured interview, teaching staff were observed during the presentation of one lesson selected by the teacher. The researcher visited the class at the agreed-upon date and time, took notes, and audiotaped the lesson. A lesson-plan artifact was collected or created with teacher input. Students completed the first of three administrations of a four-part survey. Subject-area teachers provided writing artifacts for student participants.

Phase 2: During WeJay—January 2012—March 2012



Technical support staff at BOCES and at the Lower Hudson Regional Information Center provided support to install WeJay on media center and music room computers. There were several technical issues that had to be addressed to permit installation of the product and to allow access to the WeJay network.

To kick-off the During WeJay phase of the project, a Skype session with Nelson Lauver, the American Storyteller (theamericanstoryteller.com/) was scheduled. All participating staff, students, and the principal of the high school attended. During his Skype visit, Mr. Lauver spent 30 minutes sharing his life story and unusual path to becoming a well-know radio show personality. In short, Mr. Lauver experienced failure, ostracism by classmates, and numerous instances of physical punishment throughout elementary, middle, and high school due to his undiagnosed dyslexia (http://tinyurl.com/nlauver).

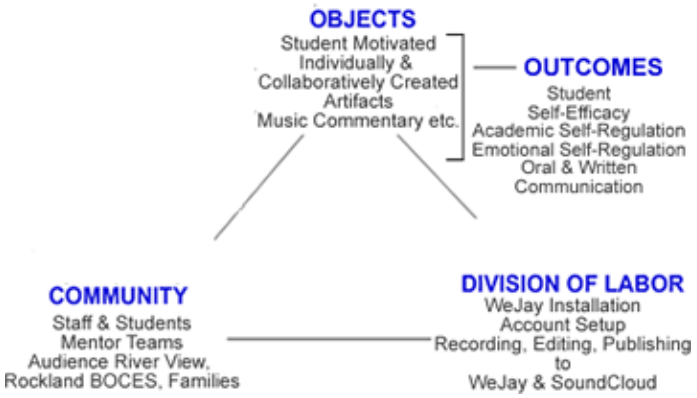
Mr. Lauver shared the writing process he uses to produce his four-minute radio podcasts covering a range of topics (mini-biographies of famous individuals, incidents from everyday life, historical accounts, etc.). Students had the opportunity to ask questions and to share their own ideas with Mr. Lauver.

To further inspire students, several radio show program Web sites identified by the staff and the researcher were included on the Hawk's Nest Google Site

(http://tinyurl.com/TheHawksNestInspiration). Two of the sites catered to student productions: WNYC's Radio Rookies (http://www.wnyc.org/shows/rookies/) and the Children's Radio Foundation (http://childrensradiofoundation.org/). During one of our meetings, we listened to a variety of shows. Staff mentors engaged students by asking them to reflect on what they heard.

Staff-Student Collaboration, Logistics, and Role Adjustments

Division of labor (*roles*) is a mediating factor between the community and the goals (*objects, outcomes*) of the activity. Key to the activity theory framework is process readjustment in response to problematic issues in order to better address community goals directed toward objectives and outcomes. Adjustments in meeting schedules and staff-student mentorships resulted in better attendance, improved student productivity, and more frequent and positive collaboration and socialization than was experienced in the first two weeks of the project.



Meetings for the During WeJay Phase of the study took place in the media center three times a week during the 7th period enrichment block (11:20 am–11:50 am). Meetings in the first two weeks of the project began with a quick full-group roundtable in which students shared their ideas and in-process work. They also identified peers with whom they might collaborate. Next, staff circulated among students to discuss ideas, suggest possibilities, support script-writing, and listen to students orally read their scripts in preparation for recording their shows.

Several issues arose during this initial period which required modifications to the process. First, staff and student participants were not always present for meetings. Students were required to meet with subject-area teachers if they had outstanding homework assignments or if they had been absent from school and missed instruction. If students had an emotionally trying day or behavioral issues that required attention, they would visit their clinicians during the enrichment period. Staff, too, were often called away to support these students, to participate in meetings with clinicians and parents, or to attend staff development. In one case, a clinician participant and a teacher participant could not be present because they had to cover each other in a homeroom class requiring them to take turns. Finally, staff found it difficult to randomly connect with students; the idea sounded attractive initially, but it did not work in practice.

The researcher and staff regrouped and revised meeting times, staff-student relationships, and responsibilities. One staff member and three students were assigned to each team. Staff first selected students with whom they had a relationship and/or whose interests were compatible.

Meeting times were adjusted with half of the staff-student mentor teams meeting on Monday, half meeting on Wednesday, and all those who were prepared to record shows meeting on Friday. All students were invited to participate all days if they wanted to work in the media center on their shows and engage with WeJay.

The researcher participated in a technology support role throughout the project. On occasion, the researcher was asked to step into a mentorship role when approached by students to discuss their show ideas, to provide writing and editing support, etc. She provided a bit of support after which the students were directed back to their mentors. This subtle redirection ensured that the students felt valued by all study participants including the researcher, but

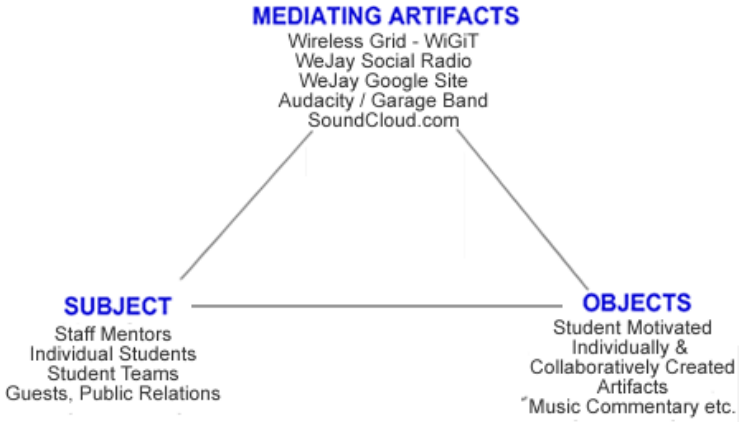
ensured that the researcher was not engaging in a role which would inappropriately impact the study.

Rules: Staff mentors reviewed acceptable behavior prior to students' use of WeJay. Rules addressed appropriate language use when chatting, composing music lyrics, and providing commentary for radio show podcasts. Rules also addressed language in music that might be shared from student iTunes libraries. The issue of copyright was raised by a teacher when a student asked if he could "rip" songs from his CDs to share. Students were asked not to copy songs from their CDs, however it was decided that it would be OK to drag songs from a CD to the WeJay share area if this operation was supported. It was not. The CD question initiated a broader discussion of copyright in relation to sharing music on WeJay. In short, it was understood that music shared on WeJay was not moving from one computer to another. When a file is dragged to the active playlist it is not available for download by others. One student likened it to inviting friends over and playing music from each other's iPods. He had speakers with a docking system for iPods. Everyone could listen, but when people left, they took their iPods with them. Students agreed that they were comfortable sharing their own podcasts and music compositions on WeJay and posting to the Hawk's Nest SoundCloud station for persistent listening. Copyrighted music would not be posted to SoundCloud.

It was impressed on students that using WeJay was a privilege and that breaking the rules would result in removal from the project. Staff participants were concerned about monitoring chat as there was no way to delete chat content. The researcher noted that deleting could be requested of the WeJay developers. Staff mentioned that they had expected more problems with

student behavior over the course of the project, however all student participants followed the rules throughout the WeJay study.

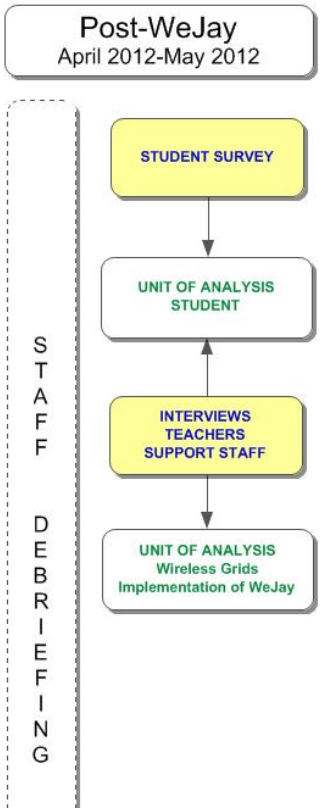
WeJay as a Mediating Artifact (tool) helped subjects to achieve the objectives and outcomes of the activity. Prior to the first hands-on WeJay session, the researcher set up WeJay accounts for all students. WeJay requires an e-mail address for login. The researcher created a Google App for education email addresses and assigned one to each student—WeJay01-WeJaynn were used to anonymize participant identities. Next, students were provided with a WeJay orientation via a full-group demonstration and written directions for logging into WeJay. Student WeJay email addresses were cross-referenced to real student names. The plan was to provide this cross-reference only to staff mentors, however, students wanted to know with whom they were chatting and friending and it was agreed that it was important for students to know their classmates' identities. Student productions created over the course of the During WeJay Phase and described in Chapter 4 were comprised of spoken word, original music compositions, commercial music, and in one case a mix of spoken word and music.



During WeJay Data Collection. The second student survey was administered toward the end of the During WeJay phase of the project. In answering the survey questions, students were asked to reflect on their WeJay experience, in which they engaged with the software, produced shows individually and collaboratively, and availed themselves of one-on-one time with their

mentors. Open-ended staff interviews took place at the culmination of the During WeJay phase of the study.

Phase 3: Post WeJay—April 2012–May 2012



The final student survey was administered at the end of April, approximately four weeks after the final student podcasts were created. This waiting period allowed students to revisit the survey questions after they had finished working with WeJay and complementary technologies to produce radio shows. Sixteen students completed the final survey and of those, fifteen had taken the survey Pre-, During, and Post-WeJay.

Post-project, a debriefing was held to give staff an opportunity to share their thoughts on the WeJay experience. The debriefing provided an additional opportunity for the researcher to verify use of statements (quotes) and interpretations associated with staff interviews.

Quantitative Data Analysis

The student survey was administered pre-WeJay, during WeJay and post-WeJay. These repeated administrations provided data amenable to statistical analysis using *t*-test for dependent means. This technique is used when you have one group and you measure the dependent variable (DV) twice—however, in the case of this study, the variable was measured for the three administrations of the student survey: Time 1>Time 2, Time 1>Time 3, and Time 2 >Time 3.

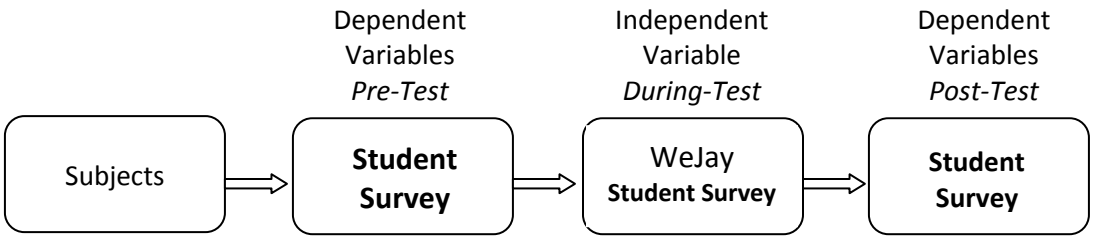


Figure 7: Student Survey Administration

The *t*-test for dependent means tells you if the mean of the first measurement is different from the mean of the follow-up measurements. In this study the Pre-WeJay (Phase 1) administration results were compared to During WeJay (Phase 2) administration results; Pre-WeJay (Phase 1) administration results were compared to Post-WeJay (Phase 3) administration results, and During-WeJay (Phase 2) administration results were compared to Post-WeJay (Phase 3) administration results.

While the survey items remained constant, the directions to students identified the context for question consideration: "considering your high school experience thus far," "considering your participation in WeJay," "now that you've participated in WeJay". The Pre-WeJay administration provided baseline data and supported triangulation with data collected via qualitative methods—observation, staff interviews, journaling, and artifact analysis. Thus, the survey data were analyzed through descriptive statistics and through a qualitative lens.

Sample Size for Student Survey

As discussed in the Reliability section of this chapter, the sample size for the survey was not sufficient to meet validity and generalization criteria. However, the researcher proceeded with an analysis of the survey results with the understanding that the process and instrument might be replicated in a future study with a larger sample size. Furthermore, combined with qualitative data, even the small sample responses proved useful in triangulating findings.

Survey Analysis

A series of models were applied to the survey data for each administration and across administrations using SPSS to interpret the data, verify reliability of the instrument, and determine if there was significant change in student responses between survey administrations which might be attributed to students experience with WeJay, other meeting tools, and the experience overall considered through the activity theory conceptual framework.

Pearson's Correlation Coefficient

Correlations are constructed to understand the relationship strength between two continuous variables. The analysis performs comparisons against all possible combinations of the questions within each section of the survey. This test was done in SPSS using the Pearson's correlation coefficient, *r*, with two-tailed option for test of significance. The results showed a positive relationship among items in each section of the survey. The item total statistics indicate only minimal changes on Cronbach's alpha if items were deleted. (Appendix T & U)

Cronbach's Alpha Coefficient

Cronbach's is a coefficient of reliability or consistency. In this research study an alpha greater than .70 is considered to be an acceptable indicator of internal consistency, which is consistent with the levels used for validating the instrument in earlier studies. (Gully & Eden, 2001; Huang, Hodson, La Torre, & Rivera, 2010; Kanlapan & Velasco, 2009; Yavuz-Erkan & Saban, 2011) Cronbach's was run for each of the three survey administrations—pre-, during, and post. The test was run within these phases for all students who took the survey and again considering only those students who took the survey across the three administrations. For all

tests, the results met or exceeded an alpha of .70 with the exception of the following: Section 3D, During WeJay n=15: .479; Post-WeJay n=15: .619; During WeJay n=16: .676. Next, each section of the survey was considered. (Appendix T & U)

t-test for Dependent Means

Repeated administrations of the student survey provided data amenable to statistical analysis using the *t*-test for dependent means. The *t*-test for dependent means determines if the mean of the first measurement is different from the mean of follow-up measurements. This technique is used when you have one group and you measure the dependent variable (DV) twice. However, in this study, the DV was measured three times comparing the following: Pre-WeJay to During WeJay (T1>T2); Pre-WeJay to Post WeJay (T1>T3); During WeJay to Post-WeJay (T2>T3). Only those students who took the survey for all three phases (n=15) were included in this analysis. Findings showed no significant changes between these phases at a significance of .05. However, as shown in the summary graphs of means in the previous section, a significant number of responses fell in a positive range leaving little room for movement based on the treatment. Results are shared in Appendix V.

Qualitative Data Analysis

Miles and Huberman (1994, p. 307) suggest that issues associated with analysis are considered "from initial study design and conceptualization to data collection, coding, innumerable types of displays, and on to conclusion drawing and reporting." While stated here as a neat sequence, the process of analysis and interpretation is iterative and complex. The authors further note that qualitative data can "help by validating, interpreting, clarifying, and illustrating quantitative findings, as well as through strengthening and revising theory" (p. 41). In the case of

this study, the researcher anticipated that each of these functions would be achieved to some extent. It is also suggested that applying multiple methods of data collection and modes of analysis and interpretation provides varied lenses for understanding and interpretation of findings in response to the research problem and questions.

The analysis and interpretation of qualitative data (interviews, observation, and artifacts) for this study was conducted through the lens of the constructs of self-efficacy and self-regulation as they relate to written and oral communications. Embedded in each of these constructs are sources, factors, and processes which either support or diminish the positive impact of the construct. These embedded attributes were used to develop categories and codes applied during the analysis and coding of both interview and observation transcripts.

Pre-WeJay semi-structured interviews (Appendix F), Pre-WeJay Observations (Appendix G), and Post-WeJay Open-Ended Interviews (Appendix Q) were parsed and coded. The researcher's observation journal (Appendix AA) and student artifacts (Appendix Z) were not coded; however, they were used to triangulate findings in consideration of the research questions. Excerpts from each of these data collection instruments are used as supporting evidence.

Interview Analysis and Interpretation

The semi-structured interview protocol (Appendix F) incorporated questions that addressed variables associated with the constructs of self-efficacy and self-regulation. The instrument focused the interviewee on these constructs. The researcher provided definitions for the constructs to ensure common understanding among interviewees. The interviewee was asked to provide input on roles of staff in supporting communicative skills, collaboration, methods employed to build and support self-efficacy and self-regulation associated with written and oral

communications, attitudes and experience associated with social networking, and perceptions of student knowledge and skills related to written and oral communications.

Observation Analysis and Interpretation

The observation protocol guide (Appendix G) provided a lens to support the researcher's focus on the constructs under investigation in relation to written and oral communications. The observation protocols considered here included factors associated with self-efficacy beliefs: mastery experiences and performance attainment, vicarious experiences, verbal persuasion by influential persons and others considered similar to oneself, and experiences of physiological states (emotional behaviors exhibited and noted by staff during the observations).

Artifact Analysis and Interpretation

Among the teacher and student artifacts considered for this study were the following: teacher lesson plans, handouts, planning documents (mind maps, organizers), student scripts, completed handouts and planning documents, and performances associated with WeJay radio shows.

The researcher was a member of the WeJay participatory group, allowing artifacts created within the WeJay interface to be viewed and considered as part of artifact analysis.

In reviewing the student artifacts, the researcher attended to development of student writing pre-, during, and post-WeJay. Student artifact analysis was addressed through two lenses. First, the researcher considered teacher evaluations of student writing and oral communications pre-project by reviewing writing samples selected by teachers for each student participant. In the during-WeJay phase, staff provided feedback intended to support students as they engaged in the process of creating radio shows. Specifically, staff provided varied levels of support based in the follow areas: identifying ideas, information-gathering, script-writing, and

creating audio recordings. Students selected topics that tapped into their personal interests. No grades were assigned. Rubrics employed by teachers to evaluate student classroom writing focused on mechanics and structure, and teachers did not use them when working with students in the WeJay space. Second, the researcher intended to review pre- , during, and post-student work including drafts and final copies of written artifacts. However, staff did not have portfolios of written work for student participants. The intent was to evaluate this work in relation to the construct of self-regulation as evidenced by: goal-setting, planning (outlines, mind-maps), self-monitoring (revisions), and modifications based on teacher input. While the researcher intended to collect multiple teacher-generated artifacts including lesson plans, writing and oral communication rubrics, student self-evaluation rubrics and checklists, planning forms, organizers, mind-maps, etc., to support a comparison of these written materials to data collected during interviews and observations, the actual artifacts collected were meager. The only artifacts made available to the researcher were lesson plans (sometimes written by the teacher immediately after the lesson observation), worksheets, and whiteboard notes. Even though artifacts were few, coding of classroom observation and semi-structured interviews proved sufficient to reveal consistencies and inconsistencies between what was said and actual classroom practice. For example, an interview in which the teacher stressed the importance of supporting students' self-regulation in writing through modeling and planning was clearly evident when the researcher observed a lesson focused on responding to document-based questions.

A Google Site (wiki) and Google Docs were used to store teacher and student documents associated with WeJay programming and management. The researcher had access to teacher,

support staff, and student in-process and completed documents. This access supported data collection and analysis of artifacts.

Qualitative Data Coding

As noted by Miles and Huberman (1994), "conceptual frameworks and research questions are the best defense against overload" (p. 55). For this study, theoretical and conceptual frameworks along with research questions provided a context to set focused boundaries for deductive development of main and sub-category codes. Segmenting and coding the qualitative data allowed the researcher to organize and study the data vis-à-vis the research questions.

The researcher designed a Microsoft Access database to store full transcripts, parsed segments, and the coding glossary. Using a relational database structure and data entry forms, transcripts were parsed allowing assignment of multiple codes to each parsed segment. A series of reports provided summary and detail-level information related to coding of segments including the number of times codes were assigned, the number of codes used in common across data-collection instruments, as well as inter-coder reliability counts and averages.

Categories were organized in a Coding Glossary (Table 8), which included definitions and excerpts from study transcriptions. This glossary was used by the researcher and second coder as discussed under intercoder reliability in the Validity section to ensure common understanding when coding. The full glossary is shared in Appendix O.

Sample from Coding Glossary

Table 8: Sample Coding Glossary

Self-Regulation: Behavior *(Main Category)*	
Behavior Plans *(subcategory)* Formal plans which delineate behaviors and actions. "A behavioral intervention plan is a plan that is based on the results of a functional behavioral assessment (FBA) and, at a minimum, includes a description of the problem behavior, global and specific hypotheses as to why the problem behavior occurs and intervention strategies that include positive behavioral supports and services to address the behavior." http://tinyurl.com/7mqzasv	*Transcript of parsed segment* We can't tackle them and drag them into the classroom, as much as we would like to do that at this point, but we really have to come up with specific strategies that are consistent and lead them in that direction.
Cueing: Verbal/Physical *(subcategory)* Student behavior is managed and supported via verbal and physical cues, i.e., cues that keep students on task might include moving closer to the student, pointing to the student's work, a touch on the back; this type of feedback can be delivered by other students.	With cues, we provide the ones who really don't have a lot of self-regulation, with verbal cues or physical, you know cues, or situations.

Coding Summary

Table 9 summarizes codes applied during data analysis across the three study phases at the Main Category level. The lengthier subcategory codes are included in Appendix P. The analysis of this qualitative coding will be discussed in detail in Chapter 4.

Table 9: Main Categories Coding Summary

MAIN CATEGORIES CODES	# Pre-WeJay Interviews # Text Segments 245		# Pre-WeJay Observations # Text Segments 120		# During WeJay Open-Ended Interviews # Text Segments 93		Assigned to Categories Total # Text Segments 458	
Collaboration - Opportunities	23	9.39%	2	1.67%	4	4.30%	29	6.33%
Collaboration - Purpose	25	10.20%	20	16.67%	9	9.68%	54	11.79%
Collaboration - Support	5	2.04%	2	1.67%	2	2.15%	9	1.97%
Instruction	31	12.65%	17	14.17%	9	9.68%	57	12.45%
Instruction Challenges	23	9.39%	7	5.83%	26	27.96%	56	12.23%
Self-Efficacy - General	41	16.73%	12	10.00%	2	2.15%	55	12.01%
Self-Efficacy - Oral Communications	26	10.61%	1	0.83%	7	7.53%	34	7.42%
Self-Efficacy - Writing	15	6.12%	4	3.33%	4	4.30%	23	5.02%

Self-Regulation - Behavior	29	11.84%	3	2.50%	0	0.00%	32	6.99%
Self-Regulation - Oral	0	0.00%	0	0.00%	2	2.15%	2	0.44%
Self-Regulation - Personal	8	3.27%	27	22.50%	35	37.63%	70	15.28%
Self-Regulation - Support	81	33.06%	151	125.83%	37	39.78%	269	58.73%
Self-Regulation - Writing	20	8.16%	27	22.50%	4	4.30%	51	11.14%
Social Networking - Value	32	13.06%	0	0.00%	5	5.38%	37	8.08%
Socializing	8	3.27%	0	0.00%	1	1.08%	9	1.97%
Task Value/ Motivation	33	13.47%	31	25.83%	64	68.82%	128	27.95%

Validity and Reliability

Internal validity refers specifically to whether sufficient evidence of a cause-effect relationship can be established between a treatment or condition and the claim that a specified outcome has been achieved or observed. *External validity* refers to the generalizability of the treatment or condition outcomes to a population beyond that being studied (Trochim, 2006, Babbie, 2010).

Sample Size & Student Survey Response

The researcher expected to enroll and maintain a participant level of 30 students over the course of the study. It was understood that the sample size for this study was not sufficient to support validity and generalization in relation to student survey results. While most students who completed the survey invested time and effort as noted by teachers and clinicians who administered the instrument, a few responded with random answers on various sections of the survey or randomly skipped questions. Only 15 students agreed to complete three administrations – pre, during, and post WeJay. As a result of random, incomplete, and low number of student participants, the survey results were compromised. As noted in suggestions

for future research, the survey instrument might serve as a starting point to develop a semi-structured student interview that addresses the same constructs.

Inter-Coder Reliability

A second coder was enlisted to recode the parsed transcriptions to verify inter-coder reliability at both main and subcategory levels. Miles and Huberman (1994) recommend that the researcher create and review codes and definitions with the second coder to ensure a common understanding.

> Definitions become sharper when two researchers code the same data set and discuss their initial difficulties. A disagreement shows that a definition has to be expanded or otherwise amended. Time spent on this task is not hair-splitting casuistry, but reaps real rewards by bringing you to an unequivocal, common vision of what the codes mean and which blocks of data best fit what codes. (Huberman, 1994, p. 64)

In preparation for second-coder collaboration, the researcher coded a subset of data for each data collection instrument. Using the Coding Glossary as a guide the second coder recoded the test subset.

A comparison of codes assigned revealed inconsistencies which were discussed and resolved yielding an above-90% inter-coder consistency at the main and subcategory level. The discussion process elucidated the need for splitting of codes, addition of codes, and clarity in code definitions in the coding glossary. The highest discrepancies were associated with Pre-WeJay lesson observations. The inter-coder Reliability Results are presented in Appendix R.

Clarity and resolution were achieved in reviewing a few of the segments, allowing the second coder to recode. A second comparison yielded a significant level of inter-coder consistency for observation data. The second coder documented rationale and some reflections related to coding decisions. These written notes and verbal exchanges allowed the researcher to

further consider the study experience and findings from the second coder's perspective. (Appendix S)

Threats to Internal Validity

Threats to internal validity for single-group pre- and post-test designs include history threat, maturation, testing, instrumentation, mortality, and regression (Trochim, 2006; Babbie, 2010). Additionally, rival explanations must be considered. Each of these threats is addressed in the context of the study below. Following this review, a brief background of the challenges associated with conducting research in special education settings is provided.

Table 10: Threats to Internal Validity

Threats to Internal Validity	
History Threat	It's not WeJay that caused the outcome; it's something else, some historical event that occurred. Current research confirms that a high percentage of students participate in social networks beyond the school day. The positive feelings associated with these out-of-school social interactions may elevate the status of WeJay simply because it provides a similar opportunity in the school environment. We will discuss this further in response to rival explanations.
Maturation Threat	Students would have had the exact same outcome even if they had never worked with WeJay. The researcher does not consider maturation a threat to the current study as it will take place over an eight-month period.
Testing Threat	This threat only occurs in the pre- /post- design. What if taking the pretest survey and conducting pretest interviews primes students and staff to attend to self-efficacy and self-regulation in a way that they might not have if this initial baseline data were not collected? Taking the pretest then affects response to the research questions. The researcher does not believe this threat to be of concern as a focus on self-efficacy, emotional and academic self-regulation, and motivation are key foci in the therapeutic high school setting.
Instrumentation Threat	In this study, the researcher administered the same student survey pre-, during, and post-WeJay. For the during-WeJay administration of the survey, students were instructed to consider their responses in the context of their participation in the WeJay project. Because the instrument remained the same for each administration, the researcher was not concerned that response would differ as a result of answering different questions; however, students were attuned to the questions asked and may have answered more thoughtfully or become bored with the instrument and become less thoughtful on subsequent administrations.

Mortality Threat Dropping out of the study.	The possibility that students enrolled in the study would leave before it was completed did occur. There is a possibility that students will require a higher level of care associated with specific emotional or behavioral disability. It is suggested that when mortality is a threat, "the researcher can often gauge the degree of the threat by comparing the dropout group against the non-dropout group on the pretest measures . . . if the pretest differences are large, one must be concerned about the potential biasing effects of mortality." (Trochim 2006).
Regression Threat	"A regression threat, also known as a 'regression artifact' or 'regression to the mean', is a statistical phenomenon that occurs whenever you have a nonrandom sample from a population and two measures that are imperfectly correlated" (Trochim 2006). In the proposed study, the same instrument was used pre-, during, and post-test. Additionally, regression is associated with a phenomenon that recognizes that when pretest scores are very low, they tend to improve on a posttest even when no treatment is applied—the "you can only go up from here" phenomenon. The researcher was attentive to the pretest survey results to determine if the self-assessments were lower than would be expected by those who are most familiar with the students (teachers and support staff). This was not the case as student ratings were significantly positive and showed insignificant changes between administrations. And, as noted, the sample size was not sufficient to claim reliability.
Rival Explanations	Activity theory is a conceptual framework that addresses the complexity of achieving goals through the interaction of individuals and tools. The eight-step model employed in this study describes the components of this interactive environment. The model is built on the understanding that it is the mediation of tools, the context of the activity, roles, rules and responsibilities, and a community of individuals who act together to accomplish explicit outcomes which must be viewed as an interrelated system. The power of individual agency in response to the activity is important to the "what" and "how" of actions and outcomes within the activity framework. As such, no one component of the model can be considered to be fully responsible for outcomes. Thus, the interactive, complex, rich lens of the activity theory conceptual framework has implications for understanding rival explanations. Additionally, special education, and indeed, all learning environments are systems that cannot be fully controlled. A tool in the hands of one teacher used with one group of students may yield different results than the same tool employed in a different context.

Threats to External Validity

Mertens and McLauglin (2004) identify population validity as the extent to which the results of an experiment can be generalized from the specific sample that was studied to a larger

group of participants. When considering generalizability of results in the context of special education, Gersten et al. (2005, pp. 154–57) describe several research criteria: (1) describe the disability and provide evidence that individuals meet the requirements of the definition, (2) provide sufficient information so that readers can identify the population of participants to which results may be generalized, (3) provide information about those who are charged with implementing the intervention, (4) describe the "salient dimensions" of the intervention, (5) describe the "fidelity of implementation" or "treatment integrity."

This study addressed Gersten's first four points. The population and context of the study were defined, the tool being implemented was identified, and the salient dimensions to be considered were identified in the context of the theoretical and conceptual frameworks. The study implementation model, data collection and analysis approach, and associated protocols were aligned to the research purpose, problem, and questions. The researcher is confident that the research conducted for this study was executed with "fidelity of implementation" and "treatment integrity."

Leedy and Ormrod (2010) discuss replication in different contexts as follows:

> *One researcher draws on a conclusion from a particular study in a specific context, and another researcher who conducts a similar study in a very different context reaches the same conclusion, and perhaps additional researchers also conduct similar studies in dissimilar contexts and, again, draw the same conclusion. Under such circumstances, these studies, taken together, provide evidence that that the conclusion has validity and applicability across diverse contexts and situations. (p. 100)*

Finally, the researcher considered "replication" as an additional strategy used to address external validity. The flow of the study across the three phases is fully documented. This researcher considers the model for the study to be robust and amenable to tests for replication in

similar and different circumstances, e.g., other special education settings, no special education settings, and at different grade levels.

Reliability

Often the goal of experimental research in special education is designed to evaluate whether changes in a dependent variable are the direct result of implementing a specified intervention. Odom, Brantlinger, et al. (2005, p. 139) argue that "special education, because of its complexity, may be the hardest of the hardest-to-do science." The complexity is associated with the variability of participants exemplified in the number of disability categories identified by IDEA and with the continuum of educational contexts for special education which is broader than that for general education—in home, inclusive classrooms, community living or vocational settings, etc.

Conroy et al. (2008) looks at research related to emotional and behavioral disabilities (EBD) and recognizes the complexity of the classroom environment, noting that researchers cannot control all of the factors that influence relations among independent and dependent variables. These factors include classroom setting, instructional strategies, individual student factors, and the overall goal of producing student outcomes. They argue that "due to the dynamic nature of classrooms, however, assuring adequate scientific control and treatment integrity in these settings can be particularly difficult" (p. 211). Consistent with good practice in research design, Conroy et al. (2008, p. 217) further argues that "the need remains to match design and method to the research questions and to use measures and analyses that can answer those questions most effectively." Drawing on the work of Odom (2004), he also notes that "the appropriate use of specific designs derives from understanding the process of identifying

evidence-based practices, for whom they are effective, under what conditions, and for how long" (p. 217).

Mertens and McLaughlin (2004, p. 69) argue that "Quantitative approaches to research other than randomized or matched experiments have great value for special educators and the people they serve." They further note that "in contexts where experiments are impossible to implement, correlational or descriptive studies can provide valuable insights."

Flaws, Problems, Challenges

Challenges associated with homogeneity, multiple components, confounding, and extraneous variables impact on generalizability and validity. Here the researcher considers potential flaws, problems, or challenges associated with the elements of research design in terms of what Johnson & Onwuegbuzie (2004) refer to as "strengths and weaknesses" of mixed-methods design and what Denscombe (2010) refers to as "advantages and disadvantages".

The table below provides an overview of the potential strengths and weaknesses identified prior to the study and the realized strengths and weaknesses identified at the culmination of the study.

Table 11: Potential and Realized Strengths and Weaknesses

	Strengths	Potential Weaknesses (Flaws/Problems/ Challenges)	Realized Strengths & Weaknesses
1	We tested a new technology in a unique environment. Introduction of wireless grids technologies in the form of a private social radio station, WeJay, in a therapeutic high school setting.	The challenge of observing students may be heightened when dealing with a population that has emotional and behavioral issues. (Note: The challenges may also contribute to new understandings and highlight potential strengths or weaknesses associated with the introduction of wireless grids technologies.)	The researcher was known to students and faculty. She had worked in the media center supporting teachers and students in using the technology, introducing new hardware and software in the prior year and at the beginning of the semester in which the study was conducted. Observation of students and their mentors engaging with WeJay was not out of the ordinary. Students were receptive to using WeJay. The researcher's presence and the instructional support related to the use of WeJay and complementary technologies were not disruptive.
2	• Use of four methods (surveys, interviews, observation, and student work analysis) contribute to additional insights and understanding that the use of only one method may not yield ("more comprehensive account") • Can add insights and understanding that might be missed when only a single method is used. • Qualitative and quantitative research used together produce more complete knowledge necessary to inform theory and practice.	• Potentially more time-consuming—particularly in participant observation and field-note data collection, transcription, coding, and analysis. • Can be difficult for a single researcher to carry out both qualitative and quantitative research, especially if two or more approaches are to be used concurrently; a research team may be required. • Researcher has to learn about multiple methods and approaches and understand how to mix them appropriately.	The researcher visited the high school media center three times per week, arriving at 7:30 a.m. and staying until 12:30 pm. The WeJay experience was scheduled during the seventh-period enrichment block. The researcher had sufficient time in the mornings and immediately following WeJay meetings to conduct interviews, observe in classrooms, and jot journal notes which were updated later in the day. Staff administered student surveys in the media center during the scheduled WeJay period pre-, during, and post-WeJay. Transcriptions and survey data entry were completed after school hours. It was a challenge to deal with the volume of data. In response the researcher set up two Microsoft Access databases. One was used to enter, manage report on, and export survey data for analysis in SPSS. The second was used to manage the three types of qualitative data subjected to coding and analysis. Again the researcher designed the database structure, coding forms, second-coder interface, and all reports required to analyze qualitative data. The researcher was well prepared to act on the varied types of data. The researcher's library of professional literature was revisited to review and implement coding and analysis appropriate for the study. The researcher's advisor and committee were informed and approved all actions taken by the researcher, and reviews were conducted over the course of the study.
3	Convergence and corroboration of findings	Potentially more expensive—time and support from paid iSchool	A transcriber was enlisted. She was known in the county and transcribed legal documents and special education forms in court cases. The researcher paid

		student transcribers.	for transcription support. All transcriptions were reviewed against original audio for accuracy. Student names were not shared with the transcriber.
4	Mixed methods can increase the generalizability of results (Lee & Baskerville, 2003; Yin, 2009)	My sample is confined to the 9^{th}–12^{th} grade students at the high school who agreed to participate.	It was hoped that at least 30 students would enroll and complete the three administrations of the student survey. However, only 15 students did so even though the number of students initially joining the project was 28. A complete review of the attrition and refusal to complete all administrations of the survey is included in the Participants section of Chapter 3.
5	More complete knowledge can be generated from mixed methods to 'inform theory and practice'	Possibility of conflicting results and how to reconcile	Results across data collection instruments were consistent. While there were too few surveys administered to claim reliability, those that were completed proved valuable in triangulating observations and staff interview data.
6	Practical-pragmatic-problem-driven approach	The qualitative/ quantitative distinction may be more complex than immediately evident.	The study proved to be challenging regarding data collection and analysis. While the population for quantitative data collection was insufficient to suggest reliability, it did prove valuable for triangulation with qualitative data and to support opportunities for single subject focus.

Procedures and the Researcher's Role

The researcher was a nonparticipant observer in classrooms, the music room, and the media center. She had no direct supervisory responsibilities over building administrators or staff. The researcher's role was that of facilitator and assistant in the areas of professional development and information management, working both with administrators and teachers in these capacities.

The researcher observed interactions of students and staff, and their use of tools to achieve the activity goal—programming and production of a radio show. Students were not interviewed or observed individually, however, they were observed as they interacted with their staff mentors. The artifacts they created were also collected for analysis.

Student surveys were administered by the participating teachers and clinicians. The researcher reviewed the instruments with the staff prior to administration. A pilot administration to a small group of students allowed the researcher to make adjustments, if required prior to the

study—none were made. Survey results were submitted to the researcher by the staff member who administered the instrument. Codes were used instead of student names (001--nnn). The researcher ensured that there was a one-to-one correspondence between the student and code for each administration by maintaining a secure cross-reference to the student name.

Ethical Treatment

To ensure ethical treatment and consent of study participants the following actions were taken. An Institutional Review Board (IRB) application was prepared and submitted with the primary researcher for this study, Dr. Ruth Small. This comprehensive document was reviewed by the IRB and research began when the positive response letter to the proposed research was received. The principal, educators, students and their parents received letters explaining the research and, as required, were asked for signatures indicating understanding and agreement to participate in the study (Appendix O). To ensure the ethical treatment of students, the researcher would not take field notes on teacher interactions with those students who do not sign the assent letter to participate in the study. *All students signed assent letters and no parent or guardian asked that a student withdraw from the study.*

The researcher observed and audiotaped (for transcription only) the interaction of the educators with their students during regular class periods – social studies, science, math, and English; the researcher had no direct interaction with students except for those cases where a staff member asked the researcher to provide technical support. The researcher was prepared to redact from transcripts any identifiable comments from students who did not sign the assent letter to participate in the study—*all students signed assent letters*. All audio files are secured in a locked cabinet until the research and ensuing publications are complete and then they will be destroyed.

Student assignments that are a regular part of the instruction were anonymized by the staff and copied for the researcher to enable analysis of the impact of WeJay participation on student work. At no time will personally identifiable information be collected on any student.

To ensure ethical treatment of participating teachers and support staff, the researcher provided a participant consent form which introduced the study and asked for staff to sign as designation of consent to participate in the study—to be interviewed, observed, and audiotaped with the understanding that the recordings would be secured during the study and destroyed when the study was completed.

A letter was sent to parents and guardians explaining the study and providing contact information should they have questions or if they wished to withdraw their student from the study—*no questions were asked and no students were withdrawn.*

Materials

All instructional materials for the WeJay project were generated by teachers and support staff. The researcher, with support staff from BOCES, installed the WeJay gridlet application on computers in the media center and music lab notebook and desktops. The researcher also set up a companion WeJay Google Apps for Education Account. A Google Site will provide an interface to store teacher and student documents associated with WeJay programming and management. Google Docs will support collaboration with peers and teachers around research and script development for radio show productions. The researcher will have access to teacher, support staff, and student in-process and completed documents. This access will support data collection and analysis associated with artifacts.

The researcher provided WeJay and Google Site training for staff prior to use of WeJay with students. Technical support was provided as necessary throughout the research process.

As noted earlier, research information was password-protected and stored at the Center for Digital Literacy on a CDL server. Audio recordings were stored in a locked drawer in the Center for Digital Literacy once they were transcribed. Only the principal investigator, Dr. Ruth Small, and researcher, Chauncey, were allowed access. Names were substituted with a unique identification number prior to storage of the data. Recordings were destroyed upon completion of the research.

Protection of Data

Research information was password-protected and stored at the Center for Digital Literacy on a CDL server. Audio recordings were stored in a locked drawer in the Center for Digital Literacy once they were transcribed. Only the principal investigator, Dr. Ruth Small, and researcher, Sarah Chauncey, were allowed access. Participant names were substituted with a unique identification number prior to storage of the data. Recordings were destroyed upon completion of dissertation and associated papers.

Summary

In summary, the methodology for this study included a quasi-experimental research design, the use of multiple methods for data collection, an articulation of various units and levels of analysis during the three stages of study, and multiple methods for analysis and interpretation of data. Careful consideration of validity, trustworthiness, and reliability of data are discussed together with ethical issues and the role of the researcher throughout the research process.

Chapter 4 provides a response to the study's research questions based on an analysis of qualitative and quantitative data collected during the three phases of the study conducted over an eight-month period from October 2011 through May 2012 in an alternative, therapeutic high school setting.

CHAPTER 4: RESULTS

> *Unlike any other creature on this planet, human beings can learn and understand without having experienced. They can think themselves into other people's places. (J. K. Rowling, 2008)*

The previous chapter provided an overview and rationale for the methodology adopted for this study including a discussion of the theoretical and conceptual frameworks for the research design; qualitative and quantitative data collection and analysis methods; researcher's role; validity and reliability; and ethical treatment. A methodology flow diagram provided a visual overview of study phases, time allocated to each phase, and data collected during each phase. Using the diagram as a guide, each phase of the study was discussed in detail.

Chapter 4 provides a response to the study's research questions based on an analysis of qualitative and quantitative data collected during the three phases of the study conducted over an eight-month period from October 2011 through May 2012 in an alternative, therapeutic high school setting. Data were collected through the following methods: staff semi-structured interviews, observations, and open-ended interviews; student artifacts; a student survey administered at pre-, during, and post- phases of the study, and journaling. Because the conceptual framework and constructs associated with the theoretical framework for this study are interrelated, research questions are addressed in a manner that attends to these relationships and considers them vis-à-vis the fragile population under investigation. This contextual, multi-lens approach is particularly appropriate for understanding and reporting results when studying diverse populations in special-needs settings (Odom & Strain, 2002).

Research Questions

This study investigated the overarching research question*: Does a wireless grids implementation of a social radio station in a therapeutic high school setting support the development of perceived self-efficacy and self-regulation associated with written and oral communication skills?*

This research study investigated the following specific research questions. As students engage as managers and contributors to the WeJay Social Radio Edgeware Gridlet, does interaction in the networked environment support the development of students':

a. Perceived self-efficacy associated with written and oral communication?

b. Academic self-regulation associated with written and oral communication?

c. Emotional self-regulation associated with written and oral communication?

In the following section the researcher looks first at the term "networked environment" as it is defined for this study. Next, the activity theory conceptual framework and the theoretical constructs are considered. An "integration of frameworks" diagram elucidates the complex interconnections among the conceptual and theoretical frameworks and associated constructs.

The Research Space

Networked Environment

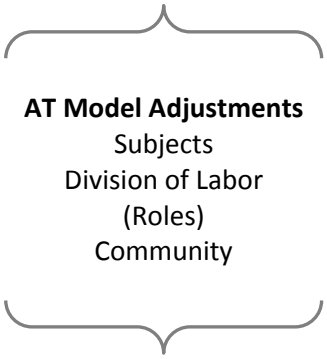
The term "networked environment" was broadly defined for this study as an environment that facilitated the creation of radio shows; encouraged collaboration and supportive interactions among study participants; and provided a platform to share productions. Specifically, the networked environment: (1) provided students with engaging technologies in the form of WeJay, a wireless grids social radio station, and complementary tools; (2) facilitated staff mentoring; (3)

supported student independence and collaboration; (4) encouraged students to tap into their interests; (5) supported socialization around radio shows among study participants; and (6) provided a platform to share student radio shows, eliciting positive responses in the form of compliments from the listening community and requests for more shows.

Conceptual Framework

> *An activity is undertaken by a human agent (subject) who is motivated toward the solution of a problem or purpose (object), and mediated by tools (artifacts) in collaboration with others (community) (Ryder, 2012).*

As noted in chapter 2, Mwanza (2001) operationalized Engeström's activity system using an eight-step model[9]. The activity theory framework for this study provides a visual model that elucidates the multiplicity of factors that individually and collectively defined the research space and suggested a relationship between the conceptual model and theoretical constructs (Figure 3).



As noted in Chapter 3, the Activity Theory framework expects process readjustments in response to problematic issues to better address community efforts directed toward achievement of objectives and outcomes. For example, adjustments in meeting schedules and institution of staff-student mentorships (*Subject, Division of Labor, Community*) resulted in better attendance, improved student productivity, and more-frequent positive collaboration and socialization. These

[9] (1) Activity - What activity is taking place? (2) Objective - Why is this activity taking place? (3) Subjects - Who is involved in carrying out this activity? (4) Tools (mediating artifacts) - By what means are the subjects carrying out this activity? (5) Rules and Regulations - Are there any cultural norms, rules, and regulations governing the performance of this activity? (6) Division of Labor - Who is responsible for what when carrying out this activity, and how are the roles organized? (7) Community - What is the environment in which the activity is carried out? 8) Outcome - What is the desired outcome from this activity?

adjustments created an environment that helped students to tackle and achieve activity objectives as evidenced through observation of interactions, attention to what students and staff said, and the products created—38 radio shows produced in the during-WeJay phase of the project. These achievements represented instances of mastery experiences, defined as "the interpreted results of one's purposive performance" and considered to be the most influential of the four sources that impact perceived self-efficacy (Bandura, 1997, Pajares, 2006, Pajares et al., 2007).

In a during-WeJay culminating open-ended interview, a staff member commented, "I think it's turned out absolutely amazing and what we learned, too, through the process is that there's more than one way to do it and there's more than one way to a great outcome. It didn't have to be done exactly one way in order for it to be okay, and I think that's attributable to your flexibility and ability to keep the goal in mind but know that there's a lot of ways to get there, and that was really good."

Theoretical Framework

Social cognitive theory's constructs of self-efficacy and self-regulation and the expectancy value construct of task value were the basis for coding and analysis of the qualitative data collected over the three phases of the study in relation to what participants said, how they behaved, how they implemented technologies to accomplish objectives, and how they interacted in formal and informal, physical and virtual learning spaces.

The data confirmed the complexity and interrelatedness of the constructs. For example, as students successfully produced shows (*mastery experiences*) and observed or collaborated with peers (*vicarious experiences and observational learning*), their perceived self-efficacy and confidence (*emotions*, *physiological arousal*) increased as evidenced by their desire to produce additional shows, to plan accordingly, to seek assistance, and to initiate collaborations with peers

and staff. Students did not ask to leave the study space to meet with their clinicians and did not require use of interventions such as blowing into a paper bag to alleviate panic issues. Likewise, as self-regulation in terms of *academic persistence* improved, so too did the potential to experience mastery. Success, in turn, motivated students to produce more shows—reflecting increased *task value*. This interplay among the constructs is representative of interactions and outcomes in the context of this study space.

Referring to the Integration of Frameworks diagram, (Figure 9) it is evident that there are multiple mediators of action and outcomes. In this study, the components of the conceptual framework and the constructs associated with the theoretical framework played varied roles as mediators. At different points in time, one construct took center stage, setting off a chain of actions that invoked other constructs. Figure 8, below, represents one such chain. The dotted lines on the arrows represent the tenuous nature of the connections as contextual and situational factors could derail the progression from inception to successful outcome. In vulnerable populations, instabilities associated with student emotional, academic, and behavioral challenges might break the chain.

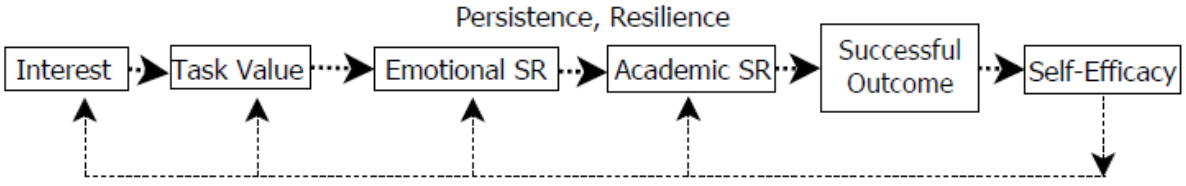


Figure 8: Example Chain of Actions

Integration of Conceptual & Theoretical Frameworks

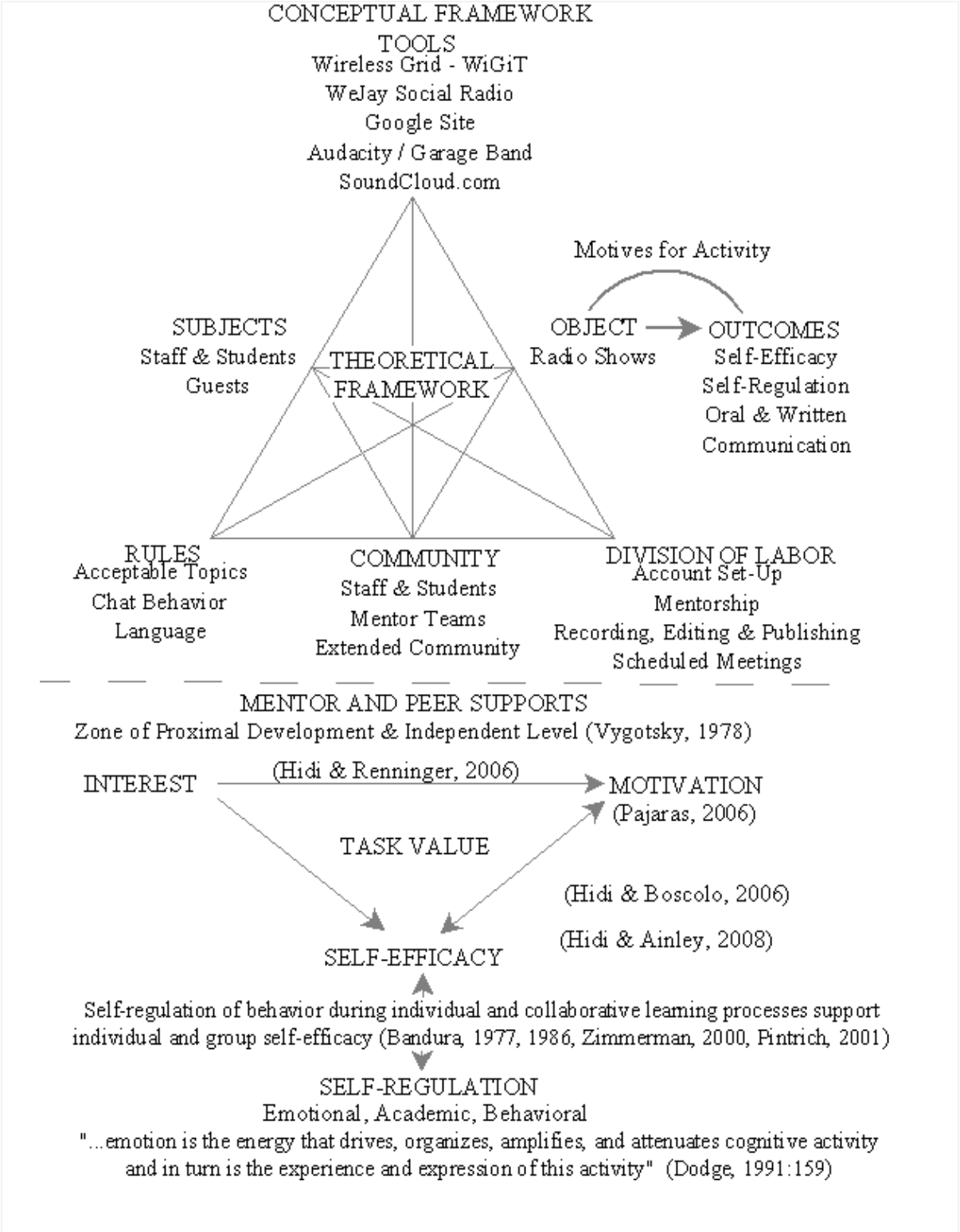


Figure 9: Integration of Conceptual & Theoretical Frameworks

Six Focus Points

In the next section the results of the study are shared through the lens of five focus points which highlight and acknowledge the complexity of the integration of frameworks and elucidate the mediating influences that support individual and collaborative chains of action. The focus points are: (1) technology, (2) staff as mentors, (3) independent and collaborative work, (4) interest and task value, (5) socialization and sharing, and (6) roundtables.

1. Technology

WeJay was introduced as a beta trial of a wireless grids social radio station whose features and functionality set it apart from other Web-based music-sharing platforms. Students and staff were invited to join the research study as the first high school to experience this innovative tool emerging from Syracuse University's iSchool WiGiT Lab. Pre-WeJay semi-structured interview questions elicited twice as many negative as positive responses regarding the value of social networking. By contrast, the few mentions of social networking in open-ended interviews conducted at the culmination of the project were positive in comparison.

Table 12: Social Networking Value

Social Networking Value Subcategories	# Pre-WeJay Interviews # Text Segments 245		# Pre-WeJay Observations # Text Segments 120		# During-WeJay Open-Ended Interviews # Text Segments 93	
Negative Perception	20	8.16%	0	0.00%	0	0.00%
Neutral Perception	2	0.82%	0	0.00%	2	2.15%
Positive Perception	10	4.08%	0	0.00%	3	3.23%

All staff members mentioned that a significant number of students were engaged in social networking and all saw it as potentially problematic. "I mean with the students, everyone's on it. I mean all the kids are definitely on it; so the bullying is huge. I mean we've had situations here you know where fights and things have been started, you know, on Facebook, so that's a

challenge I think." Staff members were concerned about bullying and issues associated with posting inappropriate or private information: "We have kids who have been cyber-bullied, because people feel more comfortable saying things when they're not face-to-face with someone. . . . So people can get in trouble saying things on there and it's never deleted."

The importance of helping students to positively engage in social networking spaces was mentioned by staff members and clinicians. "Kids are using it [Facebook] for the wrong reasons. It can be wonderful, but these kids have the tendency to blow it when given too much freedom"; "Ninety-nine percent of the bullying we are seeing in school is because something was done on Facebook the night before and it's carrying over into school. In front of a staff member I very rarely see a child bullied, but these things are going on Facebook at home, and that's the biggest problem, I think, with social networking now."

Two staff members shared specific concerns about social networking in their own lives and their colleagues' lives. "I've seen a lot of marriages collapse. People get in touch with people from their past and relive their childhood. And it seems more exciting in cyberspace than their reality." Another staff member mentioned a desire for privacy and separation of work and home life. She noted that staff should not consider friending their students on Facebook. "Well, there's a certain amount of privacy that you want to keep between your work life and your home life, and if those were to mix, there's just too much monitoring that would have to be done."

One staff member was a social networking enthusiast, more so than her colleagues. She was also one of the youngest staff participants in the study. "It's very positive. And I think that by social networking, you're talking about the different ways . . . Yeah, I do that. I have LinkedIn and Facebook, and obviously, e-mail and all the Web sites. But I also like situations where you can go like to an actual meeting with people and see people."

One teacher mentioned age as a factor for not using social networks: "I don't use Facebook. I don't use Twitter. I just, I think I graduated from college in 2000, and I don't think it started coming out yet, so I kind of missed that wave. . . . My friends definitely are [on Facebook] and they asked me. . . . I'm like, I don't do that, here's my phone number. That's just the way I am. . . ."

Not surprisingly, based on the concerns noted above, staff wanted to set clear behavioral expectations for chatting, friending, content creation, and sharing (*self-regulation*) in the WeJay space. Staff spoke with students about the importance of behaving appropriately online. One student asked what would happen if someone used inappropriate language when chatting or in shows they produced. Another student responded, "What happens in the high school stays in the high school." A staff member corrected him, noting that students who behaved inappropriately would no longer be part of the WeJay project.

Student Enthusiasm Regarding Social Networking

A majority of student participants expressed interest in the possibilities for sharing music, socializing with friends, and creating their own radio shows. Expectations for WeJay were informed by student experiences with other social-networking, music, and video-sharing applications, e.g., Facebook, iTunes, YouTube. They wanted to load WeJay on their cell phones and home computers and asked if they could engage with friends outside of the high school (this was not allowed during the study and was considered risky by the administrative staff). They also asked if they could upload videos, engage in real-time audio chat and record and deliver real-time audio commentary for their shows, none of which were possible in the beta version of WeJay. While these early-release deficiencies might have turned more students off, the movie *The Social Network* had recently been released and students were intrigued with the idea of

participating in a beta trial. One student proclaimed, “It’s like the first time people used Facebook.” Another student asked if beta testers would get rich if WeJay became famous.

During the introductory session, two students expressed a desire to use WeJay to fulfill objectives around personal areas of interest. Hawk 7 asked, “Can I use it to share my music? I can use it to get my music out there for others to hear. Can I put it on my cell phone?” Hawk 7 composed music, had a band, and produced videos of his band performing together (*mastery experiences, task value, effort, persistence, positive emotions*). His peers recognized him as a musician and he was eager to build a wider audience and garner recognition for his music (*social persuasion*). He was excited about WeJay’s potential to support his goals—to get his music out there (*positive physiological and emotional states*).

Hawk 28 wanted to create a radio show about World Wrestling Entertainment (WWE) and WrestleMania. He was one of the most prolific and enthusiastic radio show producers (*mastery experiences, task value, and positive physiological and emotional states*). Other students would sit in the room and watch and listen to him record his shows (*social persuasion*). One student, Hawk 27, asked if he could co-host one of the WWE shows, which he did (*vicarious experiences*).

On the first day of the during-WeJay project phase, students successfully logged into WeJay, friended other students, and initiated chat sessions. Figure 10 represents the network of friendships that resulted from this first WeJay experience. It was expected that students would continue to use the chat and friending features at subsequent meetings, however, one student commented that chatting with friends in the same space (the media center) “didn’t make sense.” The students wanted to install WeJay on their cell phones, an option that the researcher indicated would be available during the course of the beta trial; however the feature was not added during

the timeframe for the research study as funding was not available to support the programming effort. When students logged in to WeJay during the day there was no one on it with whom they could interact. Students expressed frustration. The social dimension of WeJay required a larger pool of participants; critical mass in this study could not be achieved, thus the potential for WeJay to motivate via its social capabilities was not realized. Students expressed a desire to invite friends outside of the project space who were not students in the high school. They accepted that this would not be possible during the beta trial but might be allowed at a future date. Clearly, the study environment limited the extent to which students could friend, chat with others, and co-host shows.

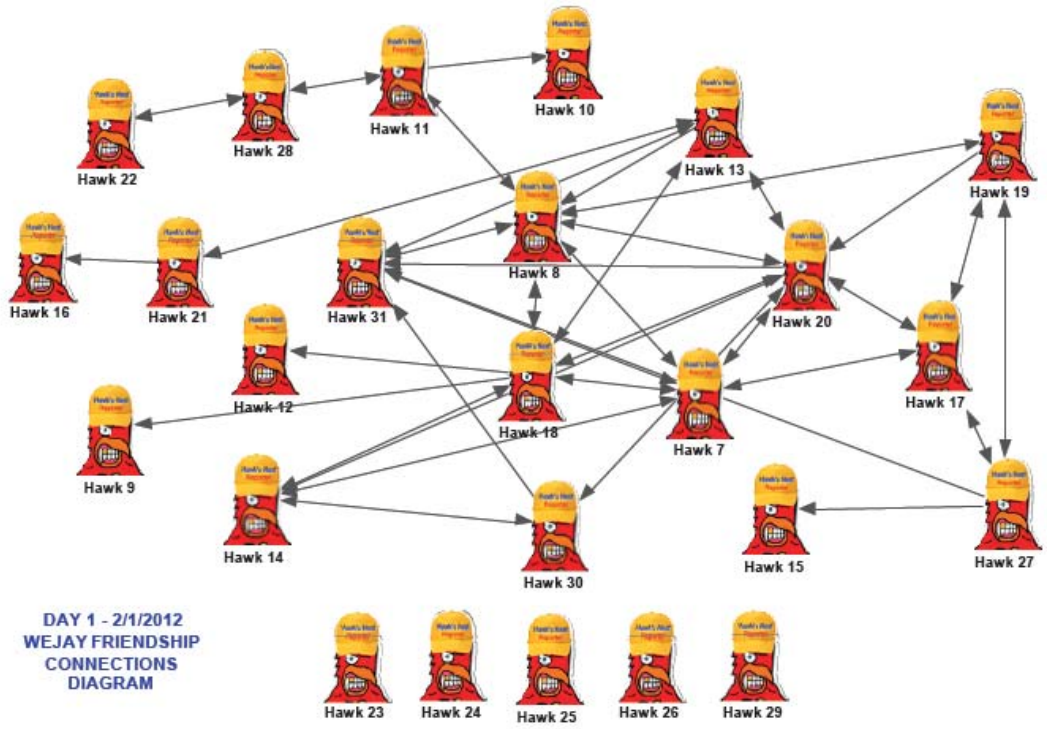
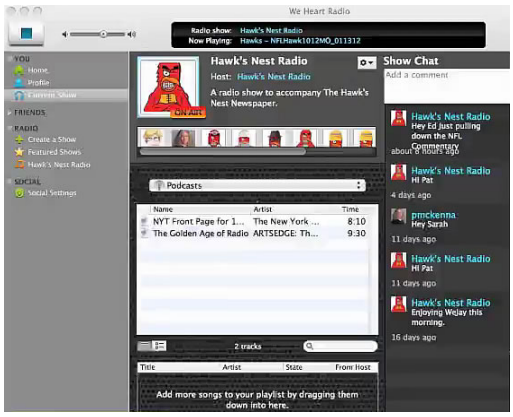


Figure 10: Friendship Map - First WeJay Experience

Student Productions



The integration of WeJay with complementary technologies (*tools*) allowed students and staff (*subjects*) to create radio shows around student interests (*object*) and to share the shows in the high school; with other BOCES locations; and with friends, parents, and guardians outside of BOCES (*community*).

Student productions were comprised of spoken word, original music compositions, commercial music, and in one case a mix of spoken word and music. A screencast for the first Hawk's Nest podcast, "NFL Highlights," was produced by two students and their staff mentor. The screencast can be accessed at https://vimeo.com/35040569. Table 13 summarizes shows produced by type. A detailed show list is included in (Appendix Y).

Thirty-eight shows were produced by the end of the during-WeJay phase of the study. Three students continued to contribute shows after the post-WeJay student survey was administered.

Table 13: Shows Produced by Type

Hawk #	Show Type	# Shows
8, 18	Interview	2
13, 21, 35	Movies	4
12, 20, 21	Personal Commentary	3
24	News	1
19, 27, 28	Sports	13
10, 14, 24	Research Report	2
31	Advice	2
22, 24	Careers	3
9, 11	Student composed music	4
19	Science	1
14, 29	Literature	2
20	Technology	1
	Total Shows	**38**
7,15, 16, 17, 25, 32	Shared music in iTunes Library	

Technology Challenges

An Activity Theory Checklist was used to evaluate WeJay functionality and describe how its use, in combination with complementary technologies, was related to the constructs of the theoretical framework for this study (Appendix X).

As noted in Section 1 of the checklist, several issues arose which were problematic and required alternative pathways to accomplish activity objectives. Three of these issues were related to file-type support, file location, and sporadic malfunctions.

> *File Types*: On the Mac platform, MP3 file types could not be dragged to the playlist unless they were imported to iTunes first. On the Windows 7 platform, some MP3 files worked and others did not. Again, importing the file to iTunes was required.
>
> *File Locations*: On the Windows 7 platform, some MP3 files could be dragged to the WeJay playlist from a thumb drive and student network drives, but this did not work on Macs. Additionally, students wanted to drag files from their iPods to the WeJay playlist, but could not; again their music had to be downloaded to the computer's iTunes library for both Mac and Windows 7 environments.
>
> *Malfunctions:* Occasionally files that were dragged to the playlist aborted, skipped, or did not start at the beginning. It was discovered that it was important to have a segment of silence at the beginning of files so that they would not lose audio.

In summary, WeJay, along with complementary technologies, provided a tool set that allowed students and staff to achieve the objectives of the activity: production of radio programs. The tools afforded end-to-end support for the steps required to publish audio podcasts, and to share in real time on WeJay and persistently via SoundCloud. Microsoft Word was the preferred tool to draft and publish scripts; GarageBand and Audacity were used to record audio. Students learned to use these technologies with little support.

Students were critical of their final productions, some recording multiple takes until they were satisfied (*persistence, self-monitoring, task value*). The technologies played a role in helping students to experience mastery (*self-efficacy*) and to persist in completing steps required to create their shows (*academic self-regulation*). Students were upbeat and did not exhibit

frustration when first takes turned into multiple takes (*emotional self-regulation*). Students were eager to complete their scripts, create audio recordings, and share their final productions on WeJay. They wanted to upload their productions to Sound Cloud to facilitate persistent sharing with friends and family.

Students were mindful of the ground rules throughout the project. Staff concerns regarding potential for negative behavior on WeJay (chatting, friending) and fears that students' shows might be inappropriate were not borne out.

2. Staff as Mentors

Staff-student teams were formed through a thoughtful process which considered prior relationships and interests. Staff felt that students would be more comfortable if they were teamed with teachers they knew, or with their own clinicians. A clinician suggested that students should embrace opportunities to ". . . collaborate with multiple staff. They need to see that it's okay for other staff members to help and the more help they get the better off they are in the long run." A teacher showed her appreciation for the opportunity to work with students she'd never had in her class: "I got to know some other students on a different level . . . working on topics [where] I could, you know, help them out."

Pairing students with staff who had similar interests, even if they had not previously engaged in a student-teacher classroom relationship, was a positive as both students and staff brought their enthusiasm to the table (*task value*). For example, students who wanted to compose music were paired with the music teacher and students who wished to produce sports commentary were paired with the gym teacher. One student was paired with both the science and the gym teacher, receiving support in producing a physics show and a sports show.

At the culmination of the project a staff member commented on mentor-student teaming: "I also think three students per adult was perfect. More than that, you know, I think would have been hard to handle, but I think three students per adult and that we just had to focus on those three kids and you know, kind of get them motivated and moving along, I thought was great."

Supporting Self-Regulation and Self-Efficacy

Staff and students entered the study space with diverse motivations, beliefs, and situational and contextual traditions. Staff held beliefs regarding students' personal challenges and their ability to self-regulate emotionally, academically, and behaviorally. Staff attention to self-regulation was representative of what would be expected in a therapeutic high school. Pre-WeJay qualitative data collection (semi-structured surveys and observations) revealed a strong focus on self-regulation supports in the areas of goal-setting, planning, modeling, and guided practice around teacher-directed activities. In the during-WeJay Phase, a focus on the "personal" received more attention with an additional focus on environmental structuring, information-seeking, organization, and transformation. This focus on personal self-regulation would be expected as students were engaged in producing shows that tapped into their interests, with mentors playing guiding and supporting roles. References to issues of emotional and behavioral self-regulation fell significantly.

Table 14: Self-Regulation Highlights

Self-Regulation - Main Category Codes & Subcategory for SR Personal (n=6)								
Categories	**# Pre-WeJay Interviews # Text Segments 245**		**# Pre WeJay Observations # Text Segments 120**		**# During-WeJay Open-Ended Interviews # Text Segments 93**		**Assigned to Categories Total # Text Segments 458**	
Self-Regulation – General Support	81	33.06%	151	125.83%*	37	39.78%	269	58.73%
Self-Regulation – Behavior	29	11.84%	3	2.50%	0	0.00%	32	6.99%
Self-Regulation – Personal	8	3.27%	27	22.50%	**35**	**37.63%**	70	15.28%
Environmental structuring	1	0.41%	0	0.00%	**3**	**3.23%**	4	
Goal-Setting & Planning	1	0.41%	0	0.00%	**12**	**12.90%**	13	
Organizing and Transforming Information	1	0.41%	5	4.17%	3	3.23%	9	
Record-Keeping & Monitoring	1	0.41%	0	0.00%	1	1.08%	2	
Rehearsing and Memorizing	0	0.00%	5	4.17%	1	1.08%	6	
Seeking Information	1	0.41%	15	12.50%	6	6.45%	22	
Time Management	0	0.00%	1	0.83%	3	3.23%	4	
Tool Use	3	1.22%	1	0.83%	6	**6.45%**	10	
Self-Regulation – Writing	20	8.16%	27	22.50%	4	4.30%	51	11.14%
Self-Regulation – Oral	0	0.00%	0	0.00%	2	2.15%	2	0.44%
*Segments coded to multiple support subcategories.								

In the following sections, emotional, written, and oral communication challenges are reviewed through the lens of qualitative and quantitative data. The role and actions of mentors in supporting students to minimize these challenges are discussed.

Emotional Challenges

A recent study by Villavicencio & Bernardo (2012) reported that positive emotions are positively associated with grades, task/outcome value, cognitive/motivational variables, and learning. Diamond & Aspinwall (2003), citing the work of others, note that "extensive research

has demonstrated that both acute and chronic negative emotions impede children's *and* adults' social functioning, empathy, exploratory behavior, and cognitive processing" (p. 138).

An explicit connection between the ability to self-regulate and emotions was mentioned variously by clinicians and teachers: "It's a goal for every one of our students to self-regulate. Clearly, they self-regulate better when their emotions are not overwhelming them. So when they're in a good mood, or they're relaxed and nothing is upsetting them at the moment, they self-regulate. They go through their day and they go about their business." This statement reflects the work of Dodge (1991), who argued that "emotion is the energy that drives, organizes, amplifies, and attenuates cognitive activity and in turn is the experience and expression of this activity" (p. 159).

Another staff member identified a linkage between emotional stability and self-efficacy in the following statement: "Their emotional disability is getting in the way. They are highly capable, some of them, and I see it. You know, a child in my class that gets mid-70s [whereas] if he didn't have all his other baggage, he'd be an 'A' student."

One teacher equated writing to risk-taking: "A lot of them [students] come with emotional issues that affect their self-confidence and their ability to take risks and put something on paper." One clinician spoke of the dreaded 12th-grade term paper: "They still come into my office with this look of horror on their face the first day the teacher says there's going to be a term paper. 'We have to write a term paper? What's a term paper? Forty pages, I can't write forty pages.' And they really don't think they know enough about anything to write that much about it."

With appropriate supports, however, students achieved differentiated levels of success, "It was a matter of chunking it down more . . . by the end of the year, the kids who can write a

term paper, have written a banging term paper. The kids who probably are never going to go to college or may always have a big struggle with writing a term paper, maybe their term paper is a lot shorter, you know, but it's like at least it's an accumulative effort, and it's not something that they need to be overwhelmed with, and I think that the kids have responded very well to that." Staff carried these supportive practices into the research space with the added benefit that they were responsible for only three students and could provide small-group and one-on-one guidance.

The following anecdotes consider changes in selected students' emotional and physiological states over the course of this research study. These states do not operate in isolation from other constructs -- self-efficacy, behavioral and cognitive self-regulation, and task value. As students gained control over their negative emotions – as negative emotions receded – students became more engaged in the process of producing their shows. As they became more engaged and focused, their efforts were rewarded with positive outcomes (*mastery experiences*) – radio shows they wanted to share with others.

In addition to the particular challenges each student faced, the anecdotes vary as follows: the first student received significant support from his staff mentor; the second student relied on the support of another student; and the third student worked independently, asking her mentor to read what she had written when her script was completed. Common across the anecdotes was the significant lag time between initial observations of emotional and physiological responses associated with the task of producing a radio show and improved responses during various stages of the process and in subsequent recordings.

Hawk21 had significant emotional challenges associated with an unstable home life. His first radio show, "I Love Fast Food" took approximately three weeks to write. He worked one-

on-one with his staff mentor during study sessions and occasionally between sessions as reported by his mentor. He was passionate about his topic – his enjoyment of fast food. However, during audio recording of his script, he spoke so rapidly that it was difficult to understand what he was saying. He paced around the room, stopped and read a few sentences, paced again, stopped, said he couldn't do it – and then asked if he could try again. He was persistent despite verbally expressing that he was nervous. His final recording was completed after several stop-and-go attempts. When he listened to the final recording, he agreed that he wanted to post his show on the Hawk's Nest Radio Station website and on Sound Cloud so that he could share with his grandmother. Neither his mentor nor the researcher thought he would consider producing another show. He continued to come to study sessions and listened to other students' recordings. Three weeks before the study was completed, he presented his mentor with several movie review scripts. He had completed the work on his own. The researcher asked if he would like to learn how to use Audacity (audio creation software) so that he could record, listen to, and edit his own work. He agreed. He learned to use the software and began recording independently. He shared his "final" recording with his mentor and the researcher. His mentor asked if he thought he could re-record at a much slower pace. Again, he agreed and did slow down. He recorded two scripts. Hawk21's persistence in completing his first recording and his independent decision to continue writing and recording are considered evidentiary of improved emotional self-regulation as well as suggesting increased interest, motivation, and engagement influenced by his first successful recording.

Hawk22, a high school senior, had been diagnosed with dyslexia. His mentor noted that supports were provided for classroom assignments that required reading and writing. Hawk22 was well-spoken and enjoyed sharing his passion for the military. He had hoped to join the US

Marines when he graduated but was concerned that his inability to read would hold him back. He indicated that this was upsetting and thought his uncle who was in a "top secret" division of the military might be able to help him. He wanted to talk about the military and was willing to work with his mentor to scribe his ideas, but he could not read the notes. He tried to record, but gave up. Another student, Hawk24, who had just entered the program and who had just written and recorded a radio show, "Joining the Police Academy," offered to work with Hawk22. He would write up and interview script using Hawk22's dictation and conduct practice interviews. This suggestion not only made sense to Hawk22, it worked. The show, "Joining the Marines," was successfully recorded. The two students maintained a friendship outside of the study space as reported by their mentor. The staff mentor also shared that the Hawk24 had been upset about his parents' decision to send him to the alternative high school. The friendship with Hawk22 had bolstered his spirits and improved his attitude in her class.

Hawk12 was facing a gender identity challenge. She did not interact with students in research study sessions or in the journalism class led by her staff mentor. While she had voluntarily signed up to be a part of the research study, attended almost every session, and listened to other students' productions, she remained a "loner," sitting apart from the other students. Her mentor suggested that she write a personal reflection for her radio show and asked if she wanted to discuss ideas. Hawk12 indicated that she did not need help. She wrote a piece titled, "The Reason It's the Way," and recorded it in one take. She asked that it be shared on the Hawk's Nest and on Sound Cloud. Her clinician noted that her willingness to put her thoughts out there was not trivial as she rarely spoke to anyone. In this instance, Hawk12 felt safe enough to speak out about an emotional issue, and she received positive feedback from other students and staff.

Written Communication

"Students struggle with writing. They have a lot of ideas in their heads, but they struggle to put them on paper . . . sometimes they don't have prior knowledge. They don't have the retention of the material." A 10-year BOCES veteran argued that "writing is the least-developed skill that our students have." Another teacher concurred: "I would think the majority are extremely deficient." These deficiencies were recognized as sources of frustration and anxiety around the writing process: "I think the students, especially in this type of population, they can lose self-esteem about their writing, so it's really challenging for them."

One teacher emphasized improvement over time so that students would recognize their own progress: "We keep a binder of their writing—of the very first topic they did, all the way to the twentieth topic that they did, and they usually grade themselves out of ten, so that obviously, as the year goes on, they see that their grade improves. They self-evaluate."

This process of self-evaluation and an understanding of progress over time points to the work of Pajaras (2006), who stressed that confidence in one's writing is linked to motivation and that motivation has a reciprocal relationship with self-efficacy. Pajaras' view is aligned to that of Hidi & Boscolo (2006) who referred to the work of Bandura (1997) and Zimmerman (2000) in arguing that self-efficacy is linked to "increased effort, persistence and positive emotional reactions" (p. 150).

Vygotsky (1978) describes the zone of proximal development as "the distance between the actual development level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers." Staff mentors acted as guides and collaborators, helping students to express their ideas, documenting plans and the steps required to carry out those plans,

and coaching and encouraging students to successful outcomes. Depending on individual student challenges—academic, emotional, behavioral—mentors provided varied supports, e.g., recording notes to capture student ideas, helping students to document steps to act on the ideas, creating outlines, and initiating progress check-ins between meetings. When students were ready to practice their oral presentations, mentors listened. They also played the role of interviewer for some student radio shows.

The teacher's role in the classroom setting was significantly different than the role of teacher as mentor in this study. Teachers engaged in traditional classroom practice focused on student writing vis-à-vis teacher-selected writing goals evaluated via externally imposed standards, rubrics, and checklists. A pre-WeJay observation in which students were taught how to respond to Document-Based Questions (DBQ) exemplified this teacher-directed practice. The teacher prepared students to follow a set of steps and to employ a specific response format that would help them to earn the most points on the writing section of the Global Studies Regents exam. A short excerpt follows:

TEACHER:	If M.___ [the English teacher] was here what would she say? What would you need? You don't have what kind of sentence ending this first paragraph?
STUDENT:	A conclusion?
TEACHER:	Not a conclusion. If you are moving from one place to another isn't that called a transition? Does that sound familiar? You need a transition sentence. Somebody?
STUDENTS in unison:	Yes
TEACHER:	It's moving us from causes to the next bullet point which is—come on guys, you're doing a good job so far. . . . Keep it up. I want to move away from the causes and say because the French Revolution happened we have all this new stuff. So can you give me a sentence instead that says because we had it we have all this new stuff?

TEACHER & STUDENT echoing:	These factors led to many French people . . .
TEACHER:	So what I'm going to do, I'm going to print this for you. And what you're going to do next time I give you a DBQ is you're going to try to write it yourself. This is going to be your model. All right? This shouldn't be so scary or overwhelming anymore. So if you want to finish writing this you don't have to rewrite what I did, just write a last paragraph and make sure it has a conclusion, right?

Activity in the research space differed markedly from the teacher-directed, assessment-driven environment described above. In their mentorship roles, staff provided personalized attention and differentiated supports to help students tackle writing tasks of personal interest. Mentors modeled, guided, and collaborated with students. They were tolerant of "nonstandard" formats, focusing on process and content instead of formal writing structures. Drafts and final show scripts varied significantly from student to student (Appendix Z), and the quality of final productions belied the sometimes messy, grammatically challenged, "unschooled" writing from which they emerged.

Oral Communication

Oral communication was considered less problematic than writing: "Their speaking skills seem to be a little bit better than their writing. I think it's because they communicate with each other and they're talking to each other. Um, there's a little bit more confidence." An analysis of the data suggested that issues regarding oral communication centered on two different concerns. The first was a focus on teaching students to use appropriate language when socializing with adults and peers. The second was the recognition that students had few opportunities to engage in academic oral communications.

Interestingly, student survey responses indicated that students liked to talk, that talking was easy for them, and that they would rather talk than write (Appendix W). Even though it was a preferred means of sharing and potentially a positive alternative for those who struggled with writing, there were few opportunities to do so: "There is a lot of discussion that goes on during lab work. . . . I've seen cases where one student is helping another, helping communicate the ideas they had," but "There's really not much of students standing up and presenting material." Other staff mentioned that oral communication received little focus, and when it did, students struggled: "Where I do see a problem with oral communication is when I ask them to speak out loud in front of the classroom . . . so that once or twice a year when I ask them to come to the front of the room to give an oral presentation, the students have a hard time."

In response to the first issue, appropriate social communications, a clinician explained: "A lot of our group work with them has to do with communication, role playing, games, you know, explaining what's great to say and what's inappropriate to say or what's effective, or what might make people angry." In the research space, staff consistently reinforced expectations for appropriate language. And as noted, earlier, the rules for student radio shows required the use of appropriate language. On those occasions where questionable language was used, audio was re-recorded or edited. Students were forthright in telling staff that the audio required editing for language (*self-monitoring*).

This research study was specifically intended to provide opportunities for use of oral language to address the second issue, academics; however, it also addressed the first issue, providing opportunities for students to engage in appropriate social communications during collaborative interactions with staff mentors and peers (*vicarious experiences, modeling*). Referring to the research study, a staff member commented, "With WeJay they not only need to

speak it but they really need to write a script before they do it so you're going to help them with that too. I think it is going to be a great tool for them."

The following review exemplifies the type of positive energy and synergy that developed between students and their mentor. The NFL commentary produced by Hawk 19, Hawk 27, and their mentor provided an opportunity for students to gain confidence in their ability to speak about their personal interest (football). Students were visibly nervous during the first recording session, carefully following their notes, stopping if they stumbled, and relying on their mentor to lead the conversation. The mentor shared a reflection on the first show: "One of the challenges for one of my students was, he felt like everything had to be calculated and scripted and he wasn't. The format we tried to present for our podcast was like a talk show atmosphere, so I was trying to convince—to tell him that, basically, just talking would be good enough—talking about the game and your own experiences. He didn't have to have every single detail outlined." The mentor succeeded in getting this point across. The shows became more relaxed in tone and the students seemed to enjoy bantering with each other and with their mentor. During the recording of the second show (18 minutes), the mentor seemed to be having as much fun as the students; the listener can hear the synergy that developed between the students and mentor (*mastery experiences*, *vicarious experience*, *task value*, *positive emotions*, *trust*). By the third and fourth shows, Hawk 19 spent more time speaking and Hawk 27, who had been the quietest of the three, became more verbal (recordings http://tinyurl.com/HawksNFL).

Pressure and Competition

Staff noted that confidence is undermined when peer pressure and competitive comparisons send negative messages: "They're embarrassed because this kid's better than them. They really want to try, but they get shut down because of the peer pressure, or peer

embarrassment, their own embarrassment." Yet, some practices that have the potential to cause embarrassment continue: "There is a lot of questioning going on during the class. I'll throw out questions. I don't look for people raising hands, and I'll put kids on the spot." Unfortunately, putting kids "on the spot" may exacerbate negative emotions (*negative verbal persuasion*, *vicarious reinforcement*).

Alleviating the pressure associated with a high-stakes test helps to relieve pressures that lead to negative emotions. A teacher described the motivation/pressure connection: "They're motivated to learn. But they do have emotional disabilities that get in their way at some point but they don't have the pressure on them because this is not a physics class that leads to a Regents exam. This is a non-Regents class so there is no pressure."

Pressure and frustration are experienced by staff as well: "But when the end result is you have to prepare them for this high-stakes test they have to have reached this type of questions on their test. So how are they going to learn if we're only teaching to the test? There is so much more I could teach them that deals with biology that they would enjoy learning but I can't 'cause there's not enough time because we have to take the test."

There is also empathy for students whose personal goals are ignored in the first two years of high school: "You know the school districts require them to go through at least freshman and sophomore years before they're given a half-day program to go to Oc Ed [occupational education program] and they're frustrated by that. It's like 'my friend who is a junior gets to go to Oc Ed and I don't. I have to sit here and earn all these credits and what's it ever going to do for me if I want to be a carpenter?' How do you argue with that?"

In keeping with Bandura (1994), mentors personalized their supports to the needs of each student:

> In a personalized classroom structure, individualized instruction tailored to students' knowledge and skills enables all of them to expand their competencies and provides less basis for demoralizing social comparison. As a result, students are more likely to compare their rate of progress to their personal standards than to the performance of others. Self-comparison of improvement in a personalized classroom structure raises perceived capability. (np)

In summary, mentors encouraged students to write shows around their personal interests, aided students in completing steps required to produce their radio shows, and gave feedback that was reassuring and supportive rather than evaluative. Attention to student interests and motivations, provision for differentiated supports, and tolerance for nonstandard forms of writing created an environment that fostered positive academic emotions. For students who have experienced failure in traditional school settings, creating a safe, personalized, supportive, low-pressure environment was essential to success. As the project progressed, students became more proactive in seeking out their mentors when they needed support or when they were ready to record their shows. Observations of interactions, a review of student artifacts, and sharing of completed radio shows suggested positive outcomes in relation to the activity theory framework objectives.

3. Independence and Collaboration

Qualitative data coded to categories of collaboration opportunities, purpose, and supports were few (Appendix P). When collaboration was discussed in pre-WeJay semi-structured interviews, responses focused on challenges and peer tutoring. With the exception of music and physical education, there were few opportunities to engage in meaningful collaborations around shared goals. The following are representative responses regarding collaboration:

- To have them collaborate is a very long and drawn out process to teach them how to do it properly. So unless you have the time and the patience and the energy, it’s a very difficult skill to teach, especially at the high school level.
- I'd say there are pockets of kids who will work together. But there is no formal time yet for collaboration.

- Well, I think there's always the desire, but the other thing though too, is that we're dealing with, you know, so many different personalities here, that it makes it difficult to collaborate. . . . We are so afraid here about conflict between students that, that it's almost like we're shying away from them working together.
- Well, I usually team somebody who is more proficient in that area and somebody who is deficient, and you team them together so that it benefits both.
- I think most teachers do a lot of cooperative learning where there are fewer behavior issues in the class. If you have a class that will work nicely together, you definitely want to use it.

Collaboration and independence are now considered through the lens of the during-WeJay phase of this study.

Project participants were engaged as consumers and producers of radio shows. Their curiosity was stimulated through brainstorming sessions with mentors and peers, and their interests were sustained as they scripted and produced radio shows independently and collaboratively (Arnone et al., 2011). While WeJay was the focus of the overarching and specific research questions for this study, additional technologies were required to accomplish the objectives set forth in the activity theory framework.

Figure11 represents points of independent, collaborative, passive, and active engagement facilitated by WeJay and complementary technologies. Community, in the form of collaboration and socialization, is central to the experiences associated with radio show production and consumption.

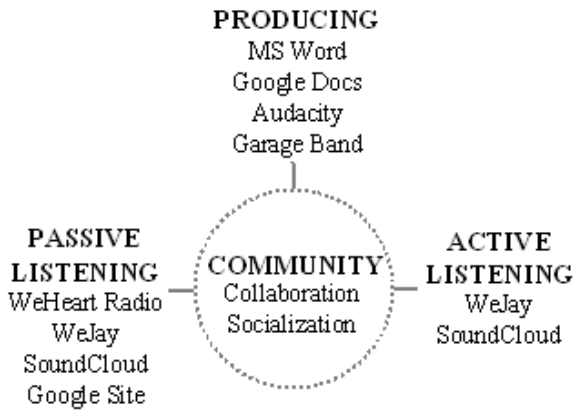


Figure 11: Points of Engagement

Vygotsky argued that through social interactions students might achieve to a higher level than would be possible if they worked independently. The concept of "scaffolding" describes processes by which a more experienced individual assists a less experienced individual in completing a task (Bruner, 1978; Applebee & Langer, 1983; McKenzie, 2000; Vygotsky, 1978).

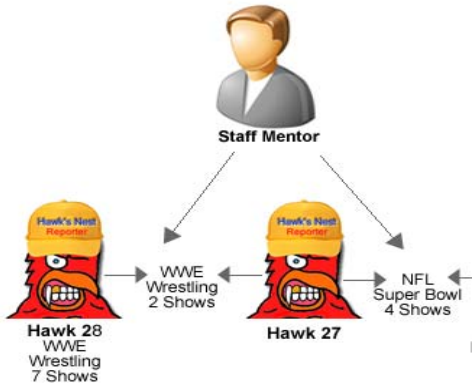
In the following section the researcher shares selected snapshots of the collaborative and independent experiences that emerged in the during-WeJay phase of the study with particular attention to students and staff as producers. She then compares collaboration in the WeJay space to that of traditional classroom settings in the high school. All shows referenced in the snapshots can be accessed on the SoundCloud website (http://soundcloud.com/information-connections/).

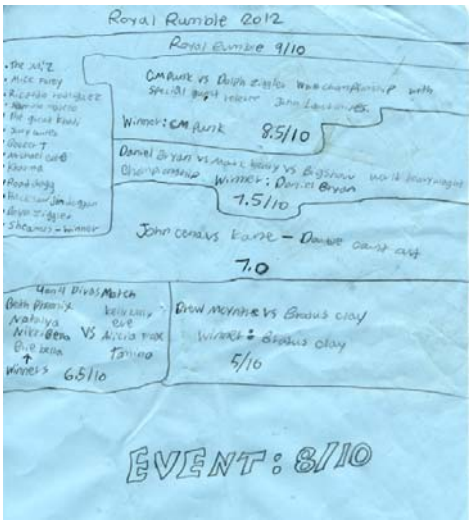
Selected Snapshots of Collaborative & Independent Experiences

Snapshot 1 – Sports

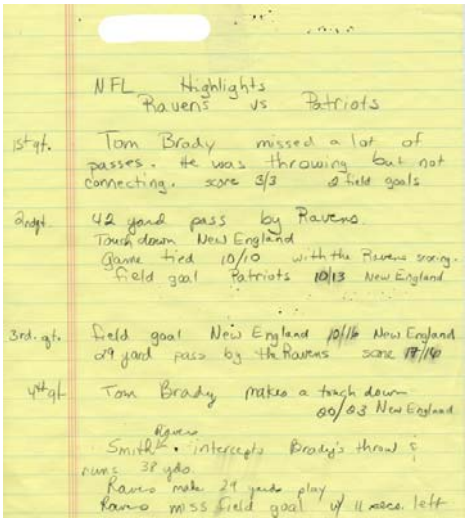
Hawk 28 produced seven shows independently and two in collaboration with his mentor and with Hawk 27. Hawk 28 was passionate about World Wide Entertainment (WWE) wrestling. He recorded a weekly show covering the prior weekend's matches. His work exemplified personal interests (*task value*) as a motivator for engagement in written and oral communications. His scripts were organized visually around what he planned to say.

His staff mentor expressed the following: "A few of them felt like they were really in a radio studio and doing a real radio show. I had the honor of recording one of the WWE podcasts with two of the boys who went back and forth and acted like





Hawk 28 - WWE Script Sample



Hawk 19 – NFL Highlights Script Sample

it was a real sports-radio show, and the banter was just so incredible that I felt like I was sitting in a studio watching a real radio show going on." Hawk 19 was passionate about football and like Hawk 28 he initiated recording sessions tracking down his mentor to co-host the shows. Hawk 19's scripts were organized by game quarters. Hawk 27 asked both Hawk 19 and Hawk 28 if he could co-host shows.

Hawk 19 voiced a concern to his mentor (and to me) that Hawk 27 didn't know that much about football. The mentor spoke with the students and suggested that Hawk 27 might do more listening than speaking initially. However, if he watched the games and did have something to add, he could share his thoughts on the game. Hawk 27 began watching the games and did begin contributing. http://soundcloud.com/information-connections/sets/hawks-nest-sports-wrestling

Snapshot 2

Hawk 21 experienced the greatest challenges in producing his shows (*emotional and behavioral*) but he also persisted with the support of his mentor, who worked with him during the 7th-period enrichment block and in her technology class. His first radio show, "I Love Fast Food," took two weeks to write and another week of practice to produce an audio recording. There was no expectation that he would work on another show, but then at the end of the post-WeJay phase he walked into the media lab with six short movie review scripts. He'd written them on his own. His mentor was not aware that he'd worked on them. He asked if I would help him to record and post the shows to SoundCloud. He used Audacity (audio recording application) to record two of the shows on his own.

http://soundcloud.com/information-connections/i-love-fast-food

Snapshot 3 – Ask Eve

Hawk 31 - During WeJay 03/09/2012

Ask Eve
This will be an advice column

Dear Eve, My boyfriend broke up with me for my best friend, and all 3 of us go to school together, and everyday I always see them hugging, and kissing and it makes me sick, what do I do?

Love sick

Dear love sick, I'm sorry that your boyfriend broke up with you and is now going out with your best friend, but here is the answer 2 your question, all you do is cry in your pillow, eat chocolate from a heart shaped box, and watch a chick flick, then call up your best friend and talk to ~~them~~ her about how you feel. Don't let your bad feelings drag you down for too long, its important to pick yourself up and move on, try to ignore your old boyfriend and his new girl.

Love, yours truly
Eve

Dear Eve I have this crush on a boy but I don't know if he has a crush on me too, how do I find out if he likes me, I want him to ask me out but I don't know if he likes me the same way that I like him, what do I do?

Scared girl

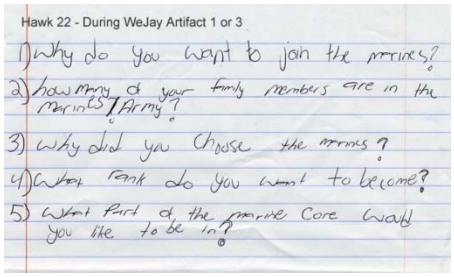
Dear scared girl, having a crush on a guy is no big deal, ~~but here is the answer to your question,~~ go up to the guy and ask him to hang out with you but its not a date, your just hanging out, ask him to go to the mall or somewhere you two feel safe, and then just walk and talk, like ask him what are his interest's and or his hobbies, and if he feels comfortable enough to tell you then you too will become friends and if he asks you out then, go for it you don't know if he could be the one.

Hawk 13 first worked with her mentor to write and record a show about the Academy Awards. During one of the meetings, Hawk 13 told her mentor that she talked to her grandmother about the show. The final show text and ratings were developed in conversations with her grandmother and her mentor. The grandmother's input is mentioned in the radio show. Responding to the during-WeJay open-end interview, the staff mentor was appreciative that she had an opportunity to get to know more about Hawk 13s grandmother, "I got to know some students on a different level."

Shortly after recording the Academy Awards show, Hawk 13 wrote an advice column script and asked Hawk 31 to be her partner in producing the show. This request was student-initiated and there was no mentor support.

http://soundcloud.com/information-connections/hawks-nest-news-advice-column

Snapshot 4 - Careers



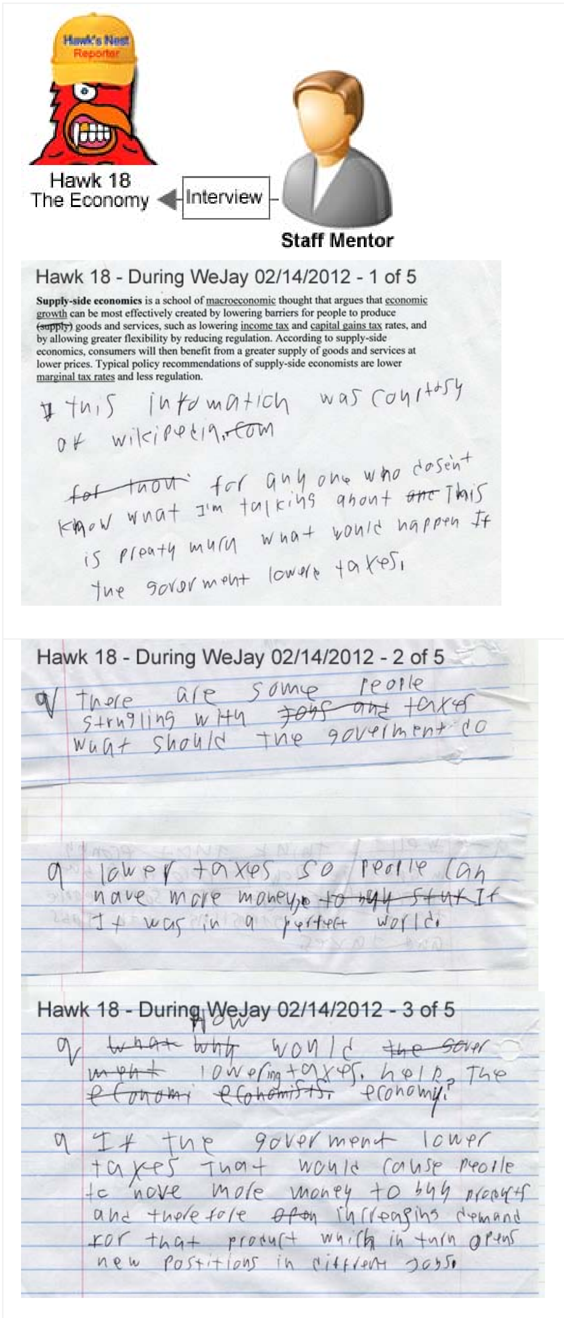
Hawk 22 – Joining the Marines – p.1

The collaboration between Hawk 22 and Hawk 24 is of particular import for this study. Hawk 22 struggles with reading and writing. He has excellent oral communication skills but is severely dyslexic. Hawk 24, on the other hand, is an excellent writer. He and Hawk 22 became friends during the research study. Hawk 24 offered to scribe and then interview Hawk 22, supporting him to successfully complete two radio shows, "Joining the Marines" and "Becoming a Firefighter." This collaborative relationship was initiated by the two students and they worked together with minimal support from their mentor.

Referring to Hawk 22's interest in joining the Marines, his mentor shared the following: "Some of my kids even found out that they wanted to go into the military, but they were potentially gonna drop out of school and get a GED, and they realized that they might not necessarily be able to do that now. . . . So it kind of gave them a realization about their career options, and it opened up a whole new exploration for them. It taught my students just to think a little bit outside of the box."

http://soundcloud.com/information-connections/joining-the-marines-hawk-22

Snapshot 5 – Opinion on the Economy

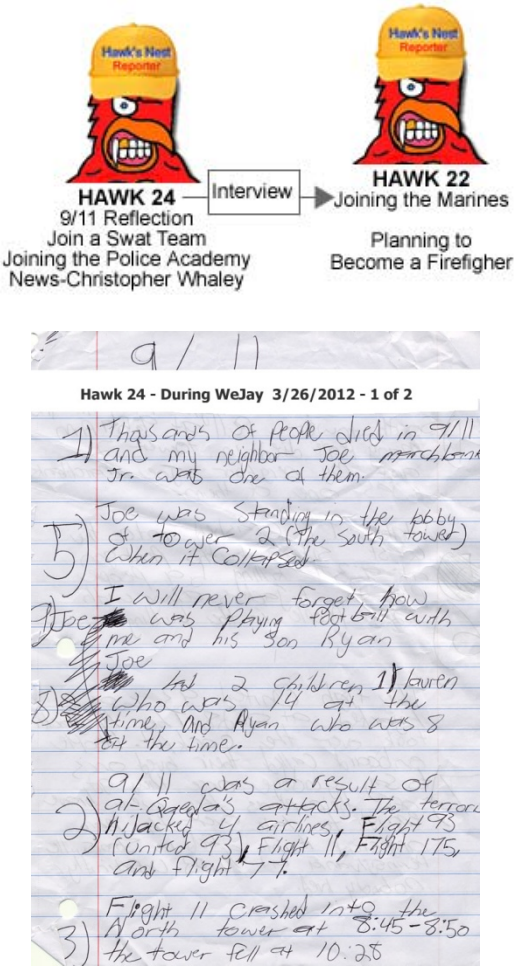

Hawk's Nest Reporter
Hawk 18
The Economy
Interview
Staff Mentor
Hawk 18 - During WeJay 02/14/2012 - 1 of 5
Supply-side economics is a school of macroeconomic thought that argues that economic growth can be most effectively created by lowering barriers for people to produce (supply) goods and services, such as lowering income tax and capital gains tax rates, and by allowing greater flexibility by reducing regulation. According to supply-side economics, consumers will then benefit from a greater supply of goods and services at lower prices. Typical policy recommendations of supply-side economists are lower marginal tax rates and less regulation.
Hawk 18 - During WeJay 02/14/2012 - 2 of 5
Hawk 18 - During WeJay 02/14/2012 - 3 of 5

The staff mentor for Hawk 18 shared the following reflection: "The podcast we did on the economy was a perfect example [of the student's insecurity]. He'd taken several weeks to write questions and answers that he wanted to have me ask and he would answer, and it came to a point where it was better just to have free thoughts instead of sticking to the script because it was much more interesting. If we stuck to the script, it would have been a two-minute presentation. I don't think anyone would have gotten anything out of it, and I don't think any of the student's humor would have come out during the presentation, if we just read the questions and answers. So I liked the fact that we went a little bit unscripted. It brought out more of his ideas then what he was just trying to put down on paper. He was able to express himself better verbally than he was able to do in writing."

http://soundcloud.com/information-connections/hawk-s-nest-news-economy

Snapshot 6 – 9/11 Reflection

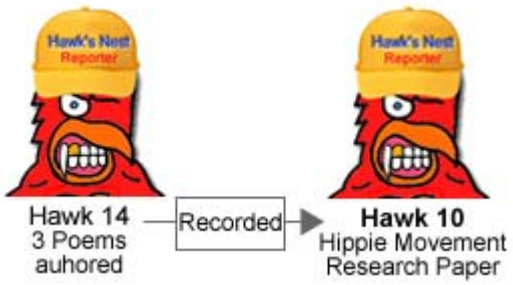
Hawk 24's "9/11 Reflection" was self-initiated, completed over a weekend, and shared in the WeJay meeting during the Monday enrichment period. Hawk 24 asked me to read what he'd written. In a one-minute, thirty-four second radio show, he'd captured the events of 9/11. The show, he said, was a tribute to his neighbor Joseph Marchbanks, a firefighter who perished trying to save others.



Hawk 24 – 911 Reflection – p.1

Hawk 24's mentor asked if she could share the show with the other WeJay participants at the next meeting. He agreed and subsequently received compliments from students, staff, and administrators who listened to his broadcast (*mastery experience*, *social persuasion*, *vicarious experience*). Positive recognition from his peers, according to his clinician and mentor, was important. Hawk 24 entered the high school a couple of months into the school year, was not happy about the placement, and was struggling to acclimate himself to the new environment. He was younger than the other study participants and also smaller in stature, all factors that were taking an emotional toll. The friendship that developed between Hawk 24 and Hawk 22 (Snapshot 4 above) was another positive outcome of collaboration in the study space (positive *emotional self-regulation*). http://soundcloud.com/information-connections/hawks-nest-news-911report

Snapshot 7 – The Hippie Movement



During WeJay Writing Artifact – – 3/20/2012

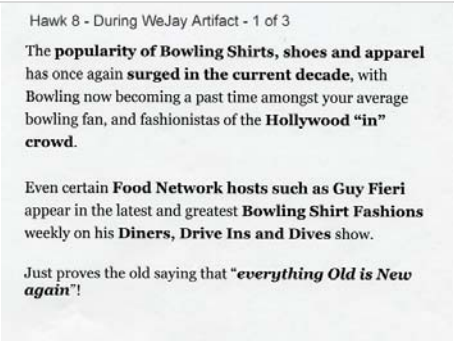
The Hippie Movement

The 1960's also known as the "Beat Generation" was a time of bohemian creativity with different styles of fashion, art and music that were influencing the generation to change old ways of living and to have a flower power view on life. The hippie movement spread feelings of love, peace and community throughout the United States, Teaching people to embrace yourself and your fellow man. The hippie view's massively changed attitudes that Americans had on there fellow man, the government and our country.

Hawk 10 & Hawk 14 – The Hippie Movement

Hawk 10 returned to her home school before she had the opportunity to record her research paper on "The Hippie Movement". She asked if Hawk 14 could read the paper for her and select music from the era. Hawk 14 agreed. The production was the only one that incorporated both voice and music. The link to the show was emailed to Hawk 10 so that she could enjoy the final production. http://soundcloud.com/information-connections/hawksnestnews-hippiemovement

Snapshot 8 – Bowling Shirts



Hawk 8 - During WeJay Artifact - 1 of 3

The **popularity of Bowling Shirts, shoes and apparel** has once again **surged in the current decade**, with Bowling now becoming a past time amongst your average bowling fan, and fashionistas of the **Hollywood "in" crowd**.

Even certain **Food Network hosts such as Guy Fieri** appear in the latest and greatest **Bowling Shirt Fashions** weekly on his **Diners, Drive Ins and Dives** show.

Just proves the old saying that "***everything Old is New again***"!

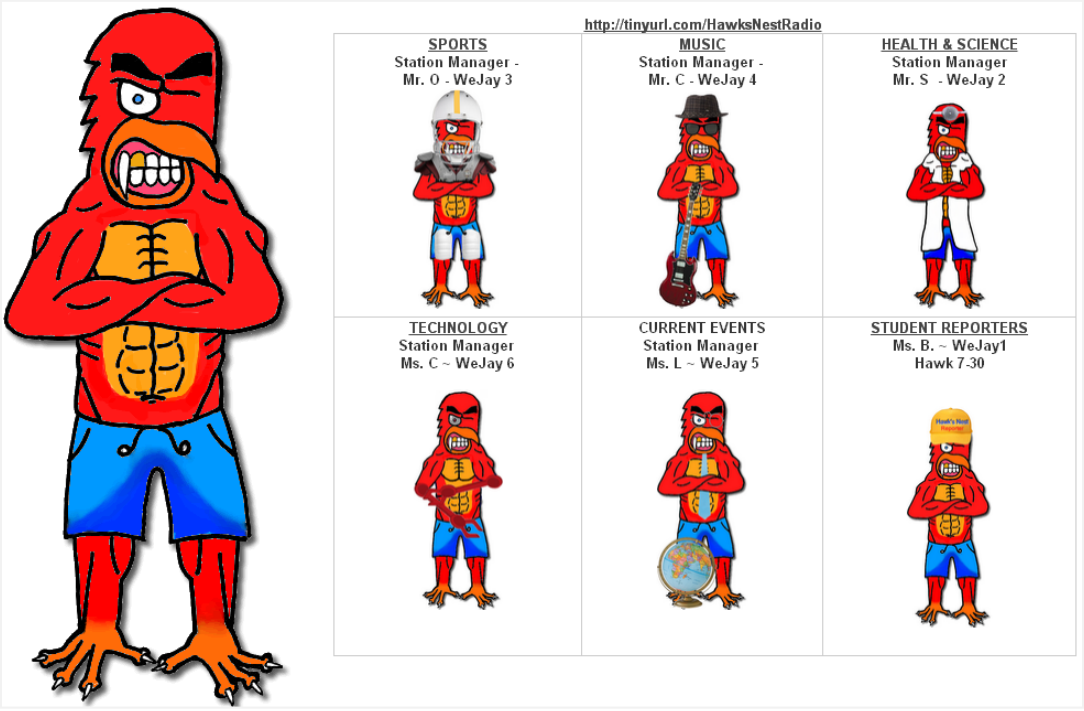
"Bowling Shirts," by Hawk 8, is an example of a lighthearted show about a teacher at the high school who wore an array of interesting bowling shirts to school. Hawk 8, now a senior, would banter with the teacher about the shirts. "Bowling Shirts" is a tribute to his teacher. Hawk

8 researched bowling shirts and bowling and wrote a short, humorous report.

http://soundcloud.com/information-connections/hawks-nest-sports-bowling

Snapshot 9 - The Hawk in the Hawk's Nest

Hawk 10 was the artist behind the Hawk's Nest logo. He asked if I could help him to colorize a black-and-white, hand-drawn copy of the Hawk. The paper copy was scanned and I showed him how to use Adobe Fireworks (image-editing software) to clean it up a bit. I gave him a quick tutorial on the paint and editing tools. A half- hour later, he'd created the Hawk and then created a Hawk in garb to represent each radio station. Using the Hawk images, he designed a poster inviting students to listen to the Hawk's Nest Radio Station. A copy of the poster was shared with the director of special education. Hawk 10 received numerous compliments on The Hawk and he was asked to create copies for the Newsletter and the Yearbook (*mastery experience, social persuasion*).



In summary, the research space provided students with an opportunity and support to engage in an authentic task around topics of personal interest, to share their work with a community of listeners—peers, teachers, clinicians, and family members—and to receive feedback on their productions. Collaboration among staff and students and between students within the space facilitated the objectives and resultant outcomes of the activity.

4. Interest and Motivation

The important dimension that this study realized was a complementary focus on students' perspectives, interests, and personal motivations, and how these could be leveraged while addressing each student's unique needs. Staff mentors were sensitive to the academic, emotional, and behavioral needs of students, providing varying levels and types of supports accordingly, e.g., verbal encouragement and attentiveness to students' feelings[10]; suggesting resources to support student interests; digging deeper to understand the source of student interests and suggesting options to address those interests. Staff guidance was aligned to the work of Reeve and Hyungshim (2006) whose research suggested that a "supportive style [of teaching] resulted in increased student interest, enjoyment, engagement and performance" as well as increased motivation. (p. 209)

Staff noted that the high school population required more attention to personal interests to be motivated, engage, and thrive: "They also need things more than the average kid to spark their interest and spark their enthusiasm and make them see that school is really worth it, because doing workbooks and listening to lectures and reading novels, over time, it's not enough for

[10] Clinicians meet with students in private and group sessions during the week and whenever a student requests support. Clinicians work closely with classroom teachers to consistently implement behavioral intervention plans, and to identify emotional stressors and life events that might impact daily functioning. Debriefing sessions are held at the end of each day, allowing teachers, clinicians, and administrators to discuss positive and challenging situations in general and related to individual students.

them. And so, anything that would enhance the programming gives them something to look forward to."

Opportunities to engage in multimedia projects were also seen as motivators that would benefit the traditional curriculum: "If they can come and do some kind of special multimedia project, it bridges the gap between Math and English and Science and Social Studies, and so, and where it can even enhance those things in a kind of interdisciplinary way is even better because then, they're using the things that they love to do to enhance the things that they try to tolerate and get through."

The theme of supportiveness around authentic and personally interesting writing tasks was linked to positive emotions in the research of Bruning and Horn (2000), which identified four clusters of conditions that influence writing motivation: "nurturing functional beliefs about writing, fostering engagement using authentic writing tasks, providing a supportive context for writing, and creating a positive emotional environment." (p. 25)

Findings of the aforementioned research are reflected in the thoughts of a staff member who recognized the connection between *independence*, *personal choice*, *confidence* and *motivation*: "I think it gave them [the students] a lot of independence because they got to choose what they wanted to do and also research it for themselves. So it gave them confidence and motivation. So I think overall, it was a positive experience for the students."

Figure 12 presents a snapshot of qualitative data coded to subcategories associated with task value. The green bars indicate responses to open-ended interviews conducted at the end of the during-WeJay phase of the study. Staff mentioned real-world connections, student ownership, and interest more frequently and commented on same: "It also gave them the opportunity to research topics that were not necessarily assigned to them. It was a little bit more

open, and they were allowed to choose topics that were of interest to them. I definitely think they liked choosing their own topic and researching their own topic."

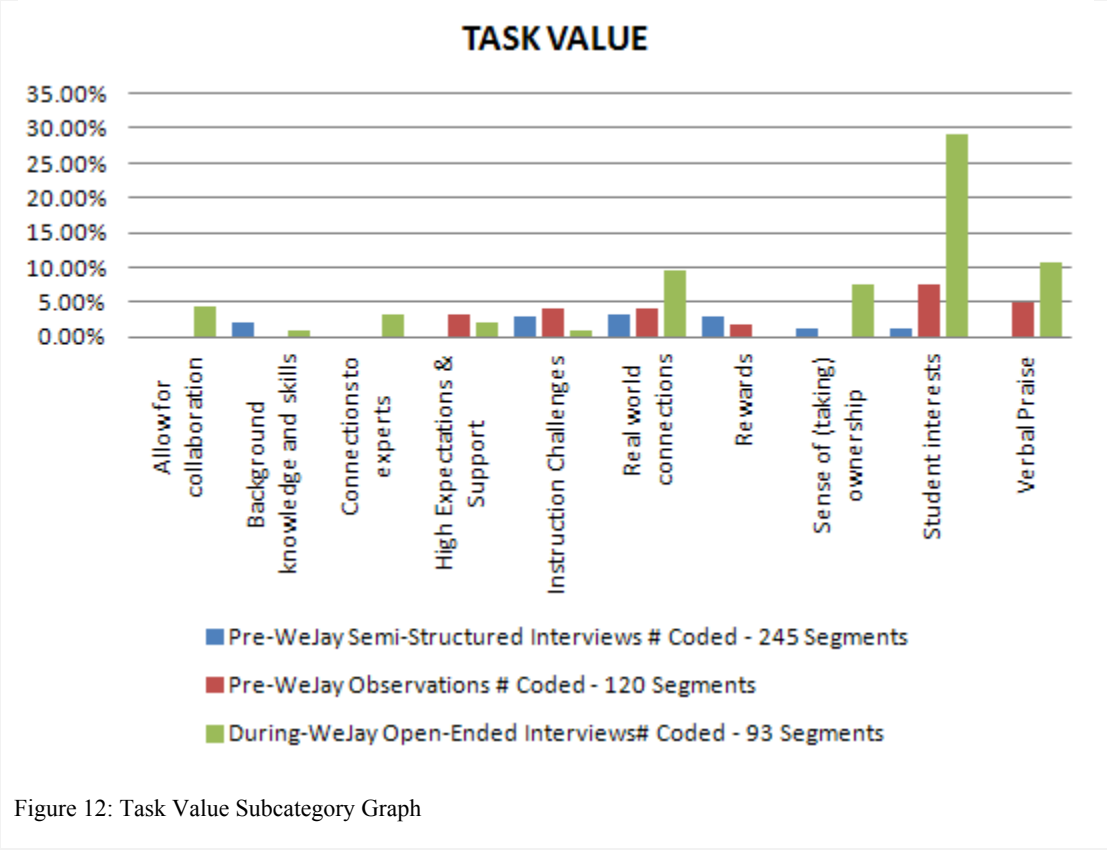


Figure 12: Task Value Subcategory Graph

In summary, the research space provided students with the rare opportunity to focus on their own interests over an extended period of time in collaboration with staff as mentors and peers as collaborators and to share their work locally and virtually. Student productions reflected a diversity of interests, providing teachers and clinicians with another window into the lives of their students.

5. Socialization and Sharing

> *I think it's just great and I think it's—every time I click onto the BOCES Web site now, and I see the WeJay Radio thing, I usually take a minute and listen to something, just because it's cool. (Teacher)*

WeJay, in its beta form, provided students with an opportunity to experience an innovative approach to socializing in real time while sharing commercial music, student-composed music, and podcasts written and recorded for the Hawk's Nest Radio Station. All students successfully logged into their WeJay stations, most friended at least one other student, and all tried the chat feature. Students were disappointed that they could not load the application on their smartphones and that they could not share the application with friends outside of the high school. WeJay is clearly an application that requires a critical mass of listeners and contributors to realize its potential. Still, WeJay's role as the motivating force that drew students and staff to the project cannot be diminished. Even though students were not fully engaged with WeJay, they requested that we bring it back next year so that they could try it again and load it on their phones. They were curious about the Facebook connection and asked if they could use it in the future. The researcher considers the potential of WeJay in chapter 5 under future research.

The request by staff and students for a persistent "radio station"—a permanent repository for student shows—required the researcher to add another technology to the mix, SoundCloud. The SoundCloud platform provided links to individual shows and an option to embed the SoundCloud player in a Web site or blog. This option supported integration with the Hawk's Nest Radio Show Google Site. Persistent access to shows and varied options to share shows prompted listeners to provide positive feedback. This positive acknowledgement indicated *mastery* and represented positive *verbal persuasion*, two factors which positively impact

perceived self-efficacy. Positive self-efficacy, in turn, leads to task value. A capable, motivated student is more likely to tackle and complete new tasks—attributes of a self-regulated learner.

6. Roundtables

Brief roundtable sessions were held for five to ten minutes at the beginning of WeJay meetings. During these sessions, students shared updates on their projects. Snippets of the previous week's recordings were played. Some student-to-student collaborations were initiated during these sessions. The roundtables helped to establish a sense of *community* and offered another venue to share student productions (*mastery experience, vicarious experience, and social persuasion*). Roundtable meetings were used to motivate and inspire (*vicarious experiences*), as was the Skype visit by Martin Lauver, the American Storyteller (http://www.theamericanstoryteller.com/) and the sharing of radio shows produced by other students (WNYC's Radio Rookies, http://www.wnyc.org/shows/rookies/).

This roundtable approach was adopted by a study participant who was also the advisor for the school newspaper. During a semi-structured interview that took place in the pre-WeJay phase of the study, I asked a follow-up question:

> **Me:** Do the students feel like they are collaborating or do they see only their own work? Do they feel group pride around the newspaper?
>
> **Teacher:** Hmm, I think they just see their own. That's actually a good point. That's a really good point, and for this group that sits over here—it's interesting too, that *Josie*[11] who sits way over there, she could have come over here, but I let her be, but this whole group over here, they're all seniors, and they're friends, except for *Bob*, who is like the odd boy out. He's over here too, but for the most part, the group that sits over here are all friends, and they work well together, and they do actually collaborate a little bit, maybe. . . . That is very interesting. You've got me thinking now. . . . That's actually a good question. I don't think so, and even when the final product comes out, they see it, but they don't—and now you've got me thinking, because you're right, they don't see it. I mean, they're in their own little entity and everything funnels through *Don* whereas, it really should be a little more

[11] Names are fictitious.

> collaborative than that. They should see what *Don* does. They should be able to step in if *Don* can't be there, or vice versa, whatever. . . . You really got me going there. I really appreciate it.

As a result of this brief exchange, the teacher told me she was trying out some ideas to help the students feel more connected. When she invited me to her pre-WeJay lesson observation, she convened the students in a roundtable session and asked them if they would share ideas for the theme and content of the following month's newsletter. During the exchange it was evident that the students were aware of their classmates' contributions. One student, suggesting that they include a sports column, noted that student *Adam* was a Giants fan and he could write the column. *Adam* agreed. The teacher recognized *John* as "Dr. Love" and another student as the "Crossword Creator." Clearly, students had established reputations around their contributions. The roundtable meeting provided a venue for students to recognize each other's contributions and to participate in team planning for the next issue.

Summary

The title of this study asked, "Can You Hear Us Now?" The research space described through the activity theory conceptual framework aimed to meet the objective of supporting the creation of student-produced radio shows that could be shared in real time using an innovative wireless grids social radio station, WeJay. This objective was extended to include persistent sharing of these shows using a complementary technology, SoundCloud. The objective of the activity was realized and the answer to the question is "yes."

The supports, resources, and opportunities for collaboration and socialization in the networked environment of the research space in the During WeJay phase of the study proved motivating for students and staff, and fostered academic, emotional, and behavioral self-

regulation and positive self-efficacy for written and oral communications as evidenced by the artifacts and radio shows produced by students (Appendix: Y). Furthermore, students and staff participants expressed their interest in continuing to use WeJay. They were motivated by the activity space (*task value*). These findings are consistent with those of other researchers. Bandura (1994) argued that "Cooperative learning structures, in which students work together and help one another, also tend to promote more positive self-evaluations of capability and higher academic attainments than do individualistic or competitive ones." Fenci & Scheel, (2005), in their study of teaching strategies on self-efficacy for non-major physics students, showed collaborative learning, use of electronic applications, and inquiry-based activities to be positively correlated with increased self-efficacy.

In open-ended interviews, two staff commented on challenges associated with the study: "I think while it was a project with a lot of deadlines, I think you were able to sort of impose those deadlines without making it something for them to feel nervous or anxious about because that could have easily happened, and that would have turned them off."

Staff and students continued to provide feedback, asking how we could continue the radio station in the fall. Student interest persisted beyond the scope of the research study. One student asked if he could record another World Wrestling Entertainment sports show, as he had been faithfully documenting outcomes of matches. His staff mentor approached me and asked that we not "shut him off" and I agreed. Following the final survey administration, two other students began scripting new shows, and these were recorded and added to SoundCloud and the Hawk's Nest Google Site. The study, while completed, continues to influence the work of students and staff. Student shows received positive feedback from the extended BOCES community, and the

study captured the attention of other schools in BOCES. A principal at one of these sites asked if she could use WeJay with her students.

Johnson & Haywood (2012) in the *Horizon Report K-12 Edition* recognized educators who believe that "the ways we learn informally can and even should inform the experiences we create in school." (p. 27). The outcomes of this research study suggest that informal, interest-based learning should take place in school, not just out of school. For some students, school is the only place they will have access to the technology and supports required to engage in powerful informal learning experiences. For vulnerable populations, these experiences may provide opportunities for success that have eluded them in formal, teacher-directed, curriculum-driven educational settings.

This chapter presented an analysis of the qualitative and quantitative data collected over the three phases of this research study through the lens of the conceptual framework, an eight-step activity theory model and the constructs of the theoretical framework, social cognitive theory's self-efficacy and self-regulation, and expectancy value theory's, task value to address the study's overarching and specific research questions. Chapter 5 provides an interpretation of the findings in relation to the research questions, considers contradictions, challenges, strengths, limitations, potential for future research, unintended consequences, and a summary of the study's contributions.

CHAPTER 5 – DISCUSSION AND RECOMMENDATIONS

This study did not change the world, but for a few months it gave some students a voice, made some of them smile, and created a space for staff to focus on kids and forget about deadlines and tests. To the students, we can hear you, and you are amazing. (S. A. C.)

The previous chapter presented an analysis of the qualitative and quantitative data collected over the three phases of this research study through the lens of the conceptual framework, an eight-step activity theory model and the constructs of the theoretical framework, social cognitive theory's self-efficacy and self-regulation, and expectancy value theory's, task value, to address the study's overarching and specific research questions. An integration of frameworks model, Figure 9, was developed to elucidate the complex intersections and reciprocal relationships among the constructs and the research space as defined through the activity theory framework. The integration model provided a lens to consider the multiple mediators of action, connections between constructs, and the tenuous nature of these connections as individuals and communities move from goals, to actions, to outcomes. Using the integration of frameworks model as a guide, five key focus points were identified to present the analysis of findings: (1) technology, (2) staff as mentors, (3) independent and collaborative work, (4) interest and task value, (5) socialization and sharing, and (6) roundtables.

This chapter provides an interpretation of the findings in relation to the research questions—whether, and the degree to which, the questions were addressed. More importantly this discussion focuses on contradictions, challenges, and potential for future research to build on the strengths of the study and to mitigate its limitations. The efficacy and value of activity theory as a conceptual model to understand, describe, shape, and respond to the context of a research space is described. Finally, unintended consequences of the study are shared.

Summary

The purpose of this study was to investigate the potential for wireless grids technologies to serve as a viable infrastructure for students in an alternative, therapeutic high school setting to participate in digital social networks. Using social cognitive theory as a theoretical framework and activity theory as a conceptual framework, this study specifically investigated how a wireless grids implementation of the WeJay Social Radio Edgeware Gridlet could be used to positively impact perceived self-efficacy and academic and emotional self-regulation associated with written and oral communications. This study also investigated how a digital networked environment could extend and enhance current methods used by school staff and programs to address cognitive, emotional, and behavioral issues affecting student socialization and learning.

The study was designed in three phases (Appendix D). The *first phase, pre-WeJay*, allowed the researcher to acclimate herself to the research space, to get to know the teachers and clinicians, and to learn more about the culture and beliefs that defined the high school as a therapeutic setting. Potential staff and student participants were introduced to WeJay and the study was described. Six staff and twenty-eight students were recruited. Data collection during this stage included a staff participant semi-structured interview (Appendix F), a classroom observation (Appendix G), and the first administration of the student survey (Appendix E). WeJay was installed on computers in the media center and music room. A guest radio personality, Nelson Lauver, the American Storyteller, Skyped in to kick off the during-WeJay phase of the study. Mr. Lauver shared his writing process and talked to students about his own challenges with dyslexia.

In the *during-WeJay phase*, student-staff mentor teams were formed. Staff mentors supported students in all phases of radio show production. The researcher provided technical

assistance to record and post shows to SoundCloud, a website that facilitated persistent sharing of student productions (http://soundcloud.com/information-connections/). Students engaged with WeJay, sharing their own productions and music. Over the course of the study 38 radio shows were produced on a range of topics associated with students' interests. Data collected during this phase of the study included administration of a staff open-ended interview (Appendix Q), writing in the researcher's observation journal (Appendix AA), and a second administration of the student survey. Twenty-four students moved to the during-WeJay phase and 19 students completed the second administration of the survey.

In the *post-WeJay phase*, the researcher coded all qualitative data. A second coder was enlisted to recode the same data to verify inter-coder reliability. A high-degree of reliability was achieved (Appendix R). 15 students completed the third administration of the survey. As discussed in the Reliability section of chapter 3, the sample size for the survey was not sufficient to meet validity and generalization criteria. However, the researcher proceeded with an analysis of the survey results with the understanding that the process and instrument might be replicated in a future study with a larger sample size. (Appendices T–W)

Strengths

From the outset, the researcher recognized the challenge of working with a diverse population of learners whose emotional, behavioral, and cognitive issues had compromised their ability to access a standardized curriculum in a traditional high school setting. The theoretical and conceptual lenses for this study were instrumental in suggesting the most effective way to create a safe, responsive setting where personal interests could be used as the impetus for written and oral communications. The initial conception of what would be "effective" was modified as we moved from the pre-WeJay to the during-WeJay phase of the project. Additional

modifications were made in the during-WeJay phase. These modifications were in keeping with activity theory's expectation that such changes should take place to further the objectives of the activity. Creation of small–group mentorships situated in an inviting physical space along with infusion of technologies that facilitated production of content and encouraged socialization around the content, supported students emotionally, behaviorally, and academically.

From a technical perspective, the director of technology and technical support staff at BOCES and the technology staff at the Lower Hudson Regional Information Center coordinated efforts to load the WeJay application on Macintosh and Windows desktop and notebook computers in the high school media center. This was not trivial as they had to open firewalls for WeJay to function and install additional software for the WeJay application to run. This effort required a significant investment in time as well as flexibility in opening specific ports to allow communication with the WeJay server.

There was buy-in from administration at all levels of BOCES. The high school's principal and assistant principal believed in the potential of the project from the moment the idea of a "private social radio station" was shared. They ensured that every teacher and student in the school attended the project information sessions and they took turns attending as well, sending a clear message to staff and students that the project was a priority. This level of exposure was key to recruitment of a cross-section of students with a range of challenges—anyone could sign-up. It also brought a diverse group of staff to the table—clinicians and teachers from every discipline as well as subject–area specialists. Diversity of students and staff ensured that the research process and questions were applied to a representative population. Administrators occasionally relieved staff participants from other duties whenever possible so that they could work with their mentees outside of the agreed-upon enrichment block. Administrators listened to student

productions and recognized students for their work. This type of support is critical for the success of any project. The researcher's connection to the high school program was key because of the sensitive nature of the program and the importance of protecting the privacy of students. Great care was taken to respect the privacy of students and staff.

Implications

Self-Efficacy & Self-Regulation

Student participants represented a cross-section of the high school population—those with varied emotional, behavioral and cognitive issues. In vulnerable populations, the path from goals to outcomes is rarely straightforward, and emotional, behavioral and cognitive challenges threaten to derail tasks that are accessible for more robust students. The eight-step model of the Activity Theory framework ensured that the contextual and situational dimensions of the study space were conducive to the goal of the activity, production of radio shows through individual and collaborative efforts (*objectives and outcomes*). The environment was structured to *maximize supports.* Staff mentors focused on student interests, chunking of tasks, and provision of clearly defined rules and roles. When students' interests resulted in personally challenging tasks, mentors helped their mentees to tackle those tasks using a step-by-step approach, modeling and collaborating as necessary (*scaffolding, zone of proximal development*). To minimize pressures there were no deadlines, grades, competition, or other imposed goals. The study was also structured to focus attention on processes and products emerging from student interests and to share those products with a friendly appreciative audience (*emotional support, verbal persuasion*). Taken together, these supports and a focus on student interests helped to mitigate emotional, behavioral, and cognitive issues (*reduction of negative physiological factors*), as evidenced by observed positive individual and group interactions. Some students produced

multiple shows; a few wanted to continue producing to the end of the school year, and asked if the radio station would be active "next year" (*task value*).

In their role as mentors, staff exemplified the guidelines identified by a 2012 publication of the National Research Council suggesting that funding agencies should support the development of curriculum and instructional programs that include research-based teaching methods, specifically:

- Engaging learners in challenging tasks, while also supporting them with guidance, feedback, and encouragement to reflect on their own learning processes and the status of their understanding.
- Teaching with examples and cases, such as modeling step-by-step how students can carry out a procedure to solve a problem and using sets of worked examples; and priming student motivation by connecting topics to students' personal lives and interests,
- Engaging students in collaborative problem solving, and drawing attention to the knowledge and skills students are developing, rather than grades or scores. (pp. 6–7)

Over the course of the study, student behavior was exemplary. They used appropriate language when chatting in the WeJay space, initiated collaborations with student and staff participants, embraced the opportunity to explore topics of personal interest, learned to use complementary technologies to record and edit their own shows, and shared their own and peer productions with their families. Chapter 4 includes snapshots that highlight these behaviors, independently and collaboratively produced student radio shows, and the sharing of those shows.

Technology–savvy students were forthcoming in supporting students who were less adept in using applications. Once identified as the "gurus," they were sought out by both staff and student participants. In their technology support roles, they showed others how to use WeJay, GarageBand, iTunes, and Audacity. These students received positive feedback and recognition from peers and staff (*mastery experiences, social persuasion).*

Written & Oral Communication

Online communication is becoming an essential life skill. Writing and speaking in personal, educational, political, and work settings are highly valued as a means to share needs and desires, show appreciation and support for others, share one's knowledge to accomplish community objectives, and, through persuasive argument, to influence other people's feelings, desires, and beliefs. Words in each of these contexts have the power to influence positive and negative outcomes[12]. Today, written and verbal acumen in these varied settings, however, is not enough. Richardson and Mancabelli (2011, p. 63) point to National Council of Teachers of English (NCTE) literacies, which suggest that, "Our students need to be fluent in the creation and analysis of multimedia and need to be able to use pictures, audio, and video to shape and convey ideas and knowledge." Delwiche and Henderson (2012) recognized the intersection of user goals and new tools. As new forms of communication emerged, users embraced and then, "bent the platform[s] to their own purposes, experimenting with new forms of citizen journalism, creating performance arts projects, designing mash-up music videos. . . digital publishing became transmedia publishing" (p. 7). Augmented by 21st century tools, words and oral communicative skills are extended through multimedia and easily published through varied online networks accessible to a global audience. Staff shared their role in supporting written and oral communication, "We teach them about how to write for their audience. So how you should write your piece depends on who is your audience. If you're writing to adults, you have to use a certain tone, certain language. If you're writing to your friends, it's more casual." In terms of oral communications, there is, again, a focus on appropriate communication: "We model it for them by the way we interact, and when I'm sitting in a classroom, which often-times, clinicians

[12] Mr. Rogers appeals to US Senate, http://youtu.be/yXEuEUQIP3Q , and Sen. Joseph McCarthy's Witch Hunts, http://youtu.be/v4N46jLdhCU.

are in the classroom during class, so how we interact with each other as staff members is how they should do it with each other." However, there was no mention of teaching these skills in concert with new technologies and tools. This is not surprising as teachers and school psychologists have had meager professional development related to integration of technologies in their teaching and clinical practices. Prensky (2012) argues that "kids are not going to think like people in Shakespeare's time, who wrote with quills, nor do we want them to. They are not going to think like people of the twentieth century, who wrote with ballpoints. They are going to think like people of the twenty-first century, influenced by the tools of that century, the tools of their time. And we should all want and expect them to" (p. 212). It is important that we prepare staff to work with this new generation of thinkers and communicators.

For all the positives associated with these new communication channels, students have to learn to self-regulate; they have to be thoughtful monitors of what they write and say. Prensky also speaks of digital wisdom, which "requires that we integrate our minds and technology" (p. 204). He argues that "Our most important educational need now is to communicate to our young people a strong sense of when their use of technology is wise, when it is just clever, and when it is dumb" (p. 205).

Without self-monitoring, the ease of sharing uncensored ideas can prove detrimental to student success both in the short and long term. The research space provided a safe environment for students to converse with peers and staff both face-to-face and by using WeJay's chat feature. It is important that students understand how their words affect the people with whom they converse in person in order to be more thoughtful when communicating in virtual environments. Clinicians work with individual students and small groups to practice these communication skills during peer mediation sessions and through contrived experiences which require students to

collaborate and cooperate: “a lot of our group work with them has to do with communication, role-playing, games, you know, explaining what’s great to say and what’s inappropriate to say or what’s effective, or what might make people angry. What to say when you’re being confronted by someone and what to say when you’re being asked something that you don’t know. Or what to say when you’re being asked to do something you don’t want to do.” In the WeJay space, we extended the contrived experiences moderated by clinicians to experiences with authentic tasks that required collaboration and communication to achieve activity objectives.

Learning: Collaboration, Socialization & Cooperation

The power of online networks makes learning through collaboration, socialization, and cooperation possible. These networks make content in multiple formats, generated by individuals, communities, and, organizations available to anyone who has an interest to know just about anything. Udell (2012) shares the following regarding networked learning in organizations: “Social learning is an emerging area in organizations that is focused on the use of social tools like blogs, microblogging, and social networks to connect colleagues and share knowledge in a low-friction manner” (p. 158). Referring to Masie (2010), Udell noted that

> More than 76 percent of companies surveyed either had or planned to have social learning in place for their employees. Ninety percent of them were using it to teach employees from the experiences of others. More than one-third of them (35 percent) were looking to use it to decrease formal learning time. Most of the time, these social learning efforts were centered on collaborative documents and systems like wikis (76 percent), but more than 67 percents of these efforts also had an internal social network component as well. (p. 260)

The caveat for accessing data through networked channels is that individuals must be savvy enough to differentiate the reliable from the unreliable. While access to scholarly literature is still costly, public libraries, schools, and colleges and universities often subscribe to databases

that provide access to high-quality, vetted content. A common thread among scholars in today's education landscape is that learning is most effective and engaging when it includes both face-to-face and virtual interactions with peers and experts (Delwiche & Henderson, 2012; Lehrer, 2012; Prensky, 2012; Richardson & Mancabelli, 2011; Udall, 2012).

While this research study focused on face-to-face mentorship, we know that individuals are no longer limited to mentors who reside in the same physical space. Today we can reach out to a network of friends and experts to ask for advice (eHow.com, About.com), to find others with common interests (Facebook, Google+), to solve complex problems through crowd-sourcing (InnoCentive.com) and citizen science (http://www.birds.cornell.edu/citscitoolkit/toolkit/steps). We can convene a disparate group of people with like interests to converse in real-time or via threaded conversations. The newest entries into this arena include Medium (https://medium.com), "building what we see as the 'future of publishing'," and Branch (http://branch.com/learn-more), where you can "grab anything from the web, talk about it with anyone, and publish it anywhere." Tools continue to emerge daily. For some this can be overwhelming, but Prensky (2012) offers the following:

> I also recommend that adults put the students' focus (and keep their own focus) on what I call the "verbs" of education, rather than the "nouns." "Verbs" are the ongoing, important skills we want our students to acquire: to understand, communicate, do critical analysis, persuade, and so forth (there are many of these, and they vary -- and their mix varies -- in different subjects). Verbs do not vary much over time -- they are the same in the past as they are now, even though we may use them differently. The "nouns," in contrast, are the technologies that we use to learn, practice, and master these skills: the hardware, software, computers, phones, tablets, Word, PowerPoint, and the millions of programs and now apps out there. (p. 207)

In 2010, Stephen Downes, senior researcher for Canada's National Research Council, in an essay titled, "A World of Change," spoke to the importance of taking charge of our own learning and a need to change our attitudes about education in general. George Siemens,

Associate Director, Technology Enhanced Knowledge Research Institute Athabasca University, suggests that "connectivism" should be considered alongside other learning theories—cognitivism, constructionism, and behaviorism. Richardson and Mancabelli (2012, p. 61) point to Siemens' suggestion that we must support learners as they "navigate the complexities of finding and connecting their own nodes of learning" and we should "act as expert filters. . . to find, sort, synthesize, save, and share the most relevant resources in our own learning." However, Siemen's suggestion is not simple to follow, as "The vast majority of teachers haven't had the experience of learning in these networks for themselves, and therefore they haven't yet come to understand the real opportunities of these connected classrooms for student learning" (p, 30). Only one teacher of those participating mentioned networking with other teachers to support his practice:

> There's also, I'm drawing a blank, I use them every day, I get email on them. [Me – Listservs?] Yeah. I'm on the Bionet Serve and the Environmental. I rarely write back because there are so many more teachers that have so many more years of experience than I do. I just love to copy and paste – a nicer way of saying steal. In my earlier years of teaching I used to grab tons of lesson plans online. It was so helpful. I still collaborate with one of my classmates from my master's program. He was much more into environmental science that I was, I was more into general sciences so we would trade back and forth. Umm, not so much online though. I also subscribe to newsfeeds, Science News is one of them, and NASAU. Almost every day I get updates from those websites.

Challenges

Time, Missed Sessions, Curriculum Requirements

Fitting one more "thing" into the school day is never easy. This research study was no exception. Issues associated with time constraints and teachers and students being pulled in multiple directions disrupted the continuity of participation for some staff and students. Teachers mentioned these issues in the during-WeJay open-ended interviews, and apologized when they missed meetings over the course of the study, and students also approached me to apologize

when they had to attend homework make-up sessions. A few students missed sessions due to emotional and physical health issues which interfered with school attendance. Upon their return, they had to make up classroom work causing them to miss additional sessions. One student, who was hospitalized for a short time, visited me in the media lab apologizing profusely for missing WeJay meetings. On all such occasions, I assured staff and students that it was OK, that we could find time to record and "play" with WeJay on alternate days if they were interested. The students followed up to complete scripts, record, etc. Unless administrators provided coverage, which happened occasionally, the teachers did not have the flexibility to make up missed sessions or to work with students outside of the scheduled enrichment block sessions. These disruptions caused some students to lose focus. For example, an excellent script written by Hawk 7 on various genres of music was never recorded.

While the enrichment block was supposed to be dedicated to WeJay, that was not how it played out. One teacher identified the problem as a logistics issue: "I think logistically the seventh period kind of always got in the way a little bit because we were grabbing kids, if kids weren't on time, the faculty wasn't on time, we have other responsibilities, you know, it would be better, honestly, it would be better if it was like a club that you did after school, and you could—no interruptions, have them for an hour. I mean basically, by the time you got started and you told us what you wanted to do, we had how much time left, 15–20 minutes tops. So that was difficult. So I think logistically, that's it, in terms of getting done what you want to get done."

The afternoon Occupational Education program cut into the 7th period and some students who wanted to participate could not engage fully, or at all, with the project: "One of the things with seventh period is that the students who go to afternoon Occ. Ed. are gone already. So it completely eliminates their participation in the program with the exception of maybe handing

something in that somebody else puts on, but without the fervor and the excitement of working with people, it kind of is like you're a contributing consultant or writer, and that sometimes is not enough of an involvement to light the fire under our kids."

Technology

Prensky (2012) argues that, "The dangerous subtext and message about technology from most adults to most children in most places is that all the 'really important' things can be done—and in most case are better done—without technology" (p. 208). He further notes that while politicians express positive messages about STEM (science, technology and engineering, and math) fields, "many of the adults actually in the kids' lives—including many of their teachers—are continually broadcasting to them the unconscious message that technology is hard to use, not helpful and best avoided" (p. 206).

As staff collaborated with students in the WeJay space, they became more comfortable working with the set of technologies used in the production of radio shows. Two staff members volunteered to work with students in quiet spaces, recording them with mini digital recorders. However, once a recording was completed, they handed the recorder back to me and I took over, downloading the audio file, importing to Audacity, editing and exporting to MP3 files, and saving the files to an accessible network drive and folder so the final output could be used with WeJay and uploaded to SoundCloud. I discovered through trial and error that when exporting to MP3 certain fields had to be included or WeJay would not play the file, a little bug that teachers would not have found—they would have given up and walked away. For those of us who are comfortable with the multiple steps and associated technologies required to produce the final output, it is easy to forget that the processes and associated skills are not trivial. In the case of

this study, the technical expertise of the researcher was essential to accomplishing the activity objective. For this reason, some of the enhancements that were suggested for WeJay, e.g., a feature to support recording of shows, would make a big difference for its use in a school setting where technical expertise is lacking. The barriers for staff to accomplish their goals are still formidable for some. As newer applications emerge that hide the complexities through on-click processes and "wizards," technologies will become more accessible. Tools such as Voicethread (www.voicethread.com), Glogster (edu.glogster.com), Edmodo (www.edmodo.com), and others have gained traction in the education community.

One staff member expressed the following: "I'd like the kids more involved with producing media projects. Working together to maybe make a video on any of the subjects we've worked on so far." He wanted me to be there to help, a role I thoroughly enjoy, but my absence means the project won't move forward; the technology skills gaps are show-stoppers even when the tools are available. One teacher was concerned about what would happen once the WeJay project ended:

> But I guess what sticks in my head is, what does the future look like? Where do we go from here? And I'm very grateful that you're here to guide us, but if you're not here to guide us, then what happens to this? I think it's a great experience, and I think it's a great idea, and it's a great innovation and we could probably do so much more because I know computers can do that. I don't know how to do that, but they do. So where do we go from here? And what does next year look like, and how do we incorporate this? Do we make this a class or do we make this . . . and those are ideas that are in my head. Like, what's next? Because I'd hate to see this ball drop and nobody pick it up again.

Contradictions

In this section, contradictions that emerged in the research space are considered through the lens of the study's conceptual framework, activity theory. Murphy & Rodriguez-Manzanares (2008) point to the work of Engestrom (2001, p. 137), who argued that contradictions are

"historically accumulating structured tensions within and between activity systems." Engestrom suggested that contradictions lead to "innovative attempts to change the activity" (p. 134). Technologies as mediating tools in an activity system are instigators of change, causing the subject and community in the activity system to "embrace a radically wider horizon of possibilities than in the previous mode of the activity" (p. 137).

In this study, WeJay enabled new ways of sharing and communicating. The environment was amenable to a learner-centered focus which considered student interests, placed teachers in the role of mentors and guides, and encouraged collaborative work with peers. The new activity system engendered by the WeJay experience seeded questions regarding the traditional classroom experience—contradictions between activity systems. Cole and Engestrom (1993, p. 8) argued that "equilibrium [in activity systems] is an exception and tensions, disturbances, and local innovations are the rule and the engine for change." Staff participants were candid about their frustrations with the status quo and the challenges of fitting a "WeJay experience" into the day. Yet the WeJay experience exemplifies the type of small change that works. It was not costly. It was implemented in a modest 40-minute enrichment block and it provided students and staff with alternative means to engage in written and oral communications that complemented the curriculum. Furthermore, the focus on oral communications filled a recognized gap in the curriculum.

During one interview a staff member shared the following as he reflected on the system's inability to address the interests and needs of different kinds of learners: "Some kids don't have, as my mother used to say in Yiddish, the *shpilkes* to sit in a classroom. How do you argue with that when a kid wants to work with his hands and be an auto mechanic or a carpenter?"

Providing options for these learners in light of dwindling budgets and a single-minded focus on academics is difficult. For example, many public schools have eliminated classes such as auto mechanics, carpentry, and home and careers (the successor to home economics). Yet such courses afford gratifying, hands-on experiences that some students relish *and need.* Such experiences provide a physical release and emotional satisfaction that might sustain engagement in the academic curriculum during the rest of the day.

Response to the Research Questions

Overarching Question

Does a wireless grids implementation of a social radio station in a therapeutic high school setting support the development of perceived self-efficacy and self-regulation associated with written and oral communication skills?

As noted in chapter 4, the supports, resources, and opportunities for collaboration and socialization in the networked environment of the research space with the objective of producing radio shows that could be shared within the high school, with the extended BOCES community, and with friends and family outside of BOCES (anonymously) was fully achieved. Qualitative data in the forms of interviews, observations, and journaling indicated that the study space proved motivating for students and staff. The activities that took place within the study space fostered academic, emotional, and behavioral self-regulation and positive self-efficacy for written and oral communications as evidenced by student-mentor interactions, individual and collaborative goal setting and planning, follow-through from idea generation to finished products -- artifacts and radio shows (Appendix: Y). Additionally, students wanted to share their

productions beyond the research space, were interested in producing shows once the study was over, and asked if the radio station would continue in the following school year.

Furthermore, students and staff participants expressed their interest in continuing to use WeJay (*task value*). Some students continued to produce shows once the formal study ended. These findings are consistent with those of other researchers. It was further noted that these findings were consistent with what would be expected in a space that supports collaboration and cooperation. "Cooperative learning structures, in which students work together and help one another, also tend to promote more positive self-evaluations of capability and higher academic attainments than do individualistic or competitive ones" (Bandura, 1994). The same was found to be true in a study by Fenci & Scheel (2005), who showed collaborative learning, use of electronic applications, and inquiry-based activities to be positively correlated with increased self-efficacy.

Two requests for extending the work carried out during the research process were indications of positive staff and administrative responses to the study outcomes. First, staff and students' desire to continue working with WeJay in the fall of 2012 was the impetus for a new, one-credit elective course called "From Text to Screen." The researcher was asked to work with staff to develop the course. Second, as a result of the WeJay study, significant funding was provided to build a TV studio in the media center.

Specific Questions

This research study investigated the following specific research questions. As students engage as managers and contributors to the WeJay Social Radio Edgeware Gridlet, does interaction in the networked environment support the development of students':|

Question A: Perceived self-efficacy associated with written and oral communication?

As evidenced by show snapshots in chapter 4, students engaged with mentors, worked with peers and independently to produce radio shows around topics of personal and group interest. They were thoughtful when selecting topics and committed to conducting sufficient "research" to identify high-quality content used to develop rich, focused presentations. Scripts, outlines, and traditional report formats were used to support production of audio recordings. A focus on high-interest, self-selected topics, support from mentors, collaboration with peers, engaging technologies, and a friendly audience that appreciated student work proved the perfect combination to motivate and support students in producing their radio shows. The process and products of the experience considered through the lens of the four sources of self-efficacy were positive on all counts. Students produced high-quality radio shows (*mastery experiences*), collaborated with peers and mentors (*positive vicarious experiences*), and received positive feedback from peers, staff, and family (*social persuasion*), and all work took place in a low-stress, supportive environment (positive *psychological response*).

Question B: Academic self-regulation associated with written and oral communication?

The environment described in *Question A* above, along with positive self-efficacy resulting from a successful production of radio shows, contributed to student academic self-regulation. Mentors were conscientious in differentiating their supports to meet the needs of the diverse group of student participants. Student behaviors attributed to academic self-regulation included setting goals with the support of their mentors and/or independently; planning what could be accomplished during each meeting; engaging in research and writing between meetings; soliciting support from mentors around research, writing, and oral communications in

preparation for audio recording; and self-assessing recordings and re-recording as needed to improve their performances based on those self-assessments.

Question C: Emotional self-regulation associated with written and oral communication?

The low-pressure, non-punitive, assessment-free research space was amenable to positive emotional self-regulation. Mentors guided students to achieve their goals. Mentors were paired with students with whom they were familiar, allowing them to recognize signs of stress or frustration. Some students completed shows quickly (one per week), while others took several weeks to write a script and record a single show. According to one clinician, the innovative technologies proved to be motivating and a positive "distraction" for students who had significant emotional issues.

Limitations

Here I consider limitations from a research perspective with the understanding that challenges described above might also be considered limitations. (1) While the methodology and research framework for the study were sound, time constraints, as well as staff and student obligations, disrupted the flow of the study for some participants. These issues were not within the researcher's control. Remaining flexible, persevering, and gently shepherding everyone along allowed the study to stay on track. (2) WeJay proved to be highly motivating despite its lack of readiness in terms of features and functionality as noted in the Activity Theory Checklist (Appendix X). However, it was the lack of a critical mass of participants that made WeJay less attractive. If time and resources allowed, WeJay should have been installed in multiple BOCES locations facilitating communication among students who were not in the same physical space. Limiting the implementation WeJay to a single high school combined with the unique population

under investigation, limits the generalizability of the study results beyond this particular therapeutic high school setting. However, the theoretical and conceptual frameworks and the results help to inform future studies as discussed in the following section.

Contributions and Suggestions for Practice

The main contribution of this study is an effective research design. This design offers teachers innovative ways to use technology to enhance collaboration, socialization, and written and oral communication for high school students with emotional, behavioral, and cognitive challenges. This contribution evolved from five key factors as illustrated in Figure 13: (1) the integration of a conceptual framework that allowed the researcher to adapt the study environment to the needs of students and staff with a theoretical framework that focused on factors associated with the emotional and behavioral stability needed for academic success, the type of stability and success often lacking in populations that experience emotional, behavioral and academic challenges (Figure 9); (2) the use of innovative mediating technologies intended to motivate communication, collaboration, socialization, and sharing; (3) a mentorship model that allowed staff to tailor instruction to meet the individual needs of each student; (4) a focus on student-selected topics for radio show productions; and (5) community building, collaboration, and social networking that supported community building.

While the results of the study cannot be generalized due to its small sample, the research design may prove useful in other therapeutic high schools where staff members are willing to use technology to enhance the emotional and academic success of their students.

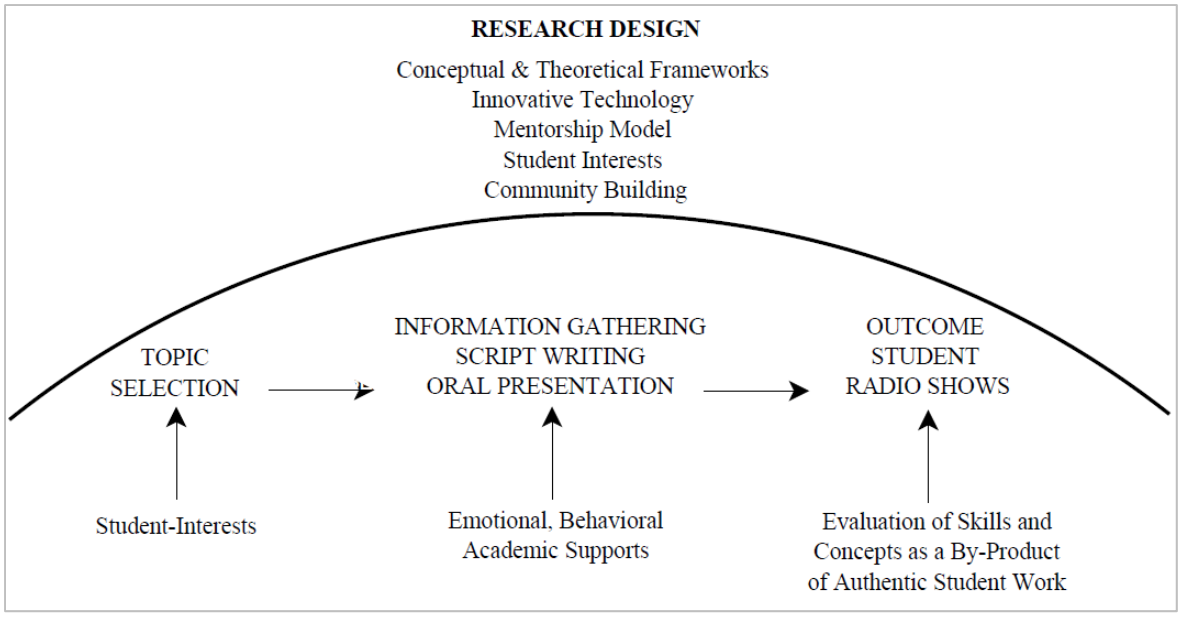


Figure 13: Contribution - Research Design

Each of the five factors is discussed below.

1) Integration of Frameworks: A Lens for Understanding and Adapting Practice

This research study demonstrated the efficacy of integrating the conceptual framework, activity theory, and the theoretical framework constructs of self-efficacy, self-regulation, and task value. The activity theory framework highlighted tensions and contradictions between the personalized, student-centered focus of the study space and the standardized, curriculum-centered focus of the traditional classroom. Activity theory served to identify opportunities to improve practices in both spaces. The decision to implement a mentorship model to provide one-to-one, differentiated support for student participants was motivated by the objectives of the activity: student-produced radio shows, improved perceived self-efficacy, and improved emotional and academic self-regulation. The integration of the conceptual and theoretical frameworks ensured that one objective didn't suffer at the expense of another.

2) Technology-Mediated Opportunities for Collaboration and Socialization

This study played a role in addressing 21st-century collaborative and communicative competencies facilitated through, WeJay, an innovative, private, wireless grids social radio station. A wireless grids design ensured student anonymity and allowed teachers to monitor student behavior in a private space. It is expected that the next release of WeJay will be accessible on mobile devices providing additional opportunities for students to interact with and co-produce radio shows with their peers. Sharing of student work with a wider community is easily accomplished through the addition of complementary technologies.

3) Mentorship Model

Mentors provided personalized, differentiated supports around student interests. They were attentive to student emotions. As noted earlier, for students who have experienced failure in traditional school settings, creating a safe, personalized, supportive, low-pressure environment is essential to success. The mentorship model proved motivating not only to students but also to staff, who shared their appreciation for the opportunity to get to know more about their students. Students were proactive in seeking out their mentors when they needed support or when they were ready to record their shows. Students' face-to-face communication with their mentors provided another opportunity to practice collaboration and socialization skills that might transfer to interactions in virtual spaces.

4) Student-Selected Topics

Key to student motivation was the opportunity to select topics of personal interest. The radio shows produced over the course of the study represent a range of topics that showcase these diverse interests. Three questions from Section 1 of the Student Survey address personal

goals, outcomes, and endeavors to which the student is personally committed. Considering the fifteen students who completed three administrations of the survey (pre-, during, and post-WeJay), the Mean responses to these questions is somewhat higher than responses to other questions. While the sample size is small and threats to validity are acknowledged, these results are aligned to previous research (Berry & West, 1993; Sverko & Babarovic, 2008; White-McNulty, 2012) and may offer an important focus for future research associated with interest-based efforts in fragile populations. (Appendix U)

5) Community Building, Collaboration, and Social Networking

As noted in the introduction to this study, collaborative efforts are often the most efficacious means to achieve effective, valued outcomes. Citizen science and crowdsourcing initiatives call on collective intelligence to solve real world problems for the common good. Scientific breakthroughs, for example, frequently emanate from group efforts. Recognition around these breakthroughs is often attributed to groups and organizations rather than individuals. Employers expect their employees to be team-players, to be supportive of colleagues, and to be cognizant of what others can contribute when they are charged with tackling complex tasks.

Best practice in educational settings[13] points to approaches that support collaborative, authentic teaching and learning, i.e., inquiry based, project based, and experiential environments. These practices provide opportunities for engaging, authentic learning experiences. Such practices allow teachers to model, and students to practice, tolerance and respect, active listening, appropriate sharing, etc. These practices include collaborative behaviors required to

[13] Recognition of the efficacy of collaborative, experiential, authentic learning is highlighted variously in national and state standards and by major organizations, including: American Association of School Libraries; International Reading Association; American Political Science Association, etc.

purposefully and effectively interact with others in face-to-face and virtual (social networking) settings.

Common to productive collaborations in both work and educational settings are: a community of participants motivated around a common goal to achieve specific outcomes; a supportive, safe work environment that recognizes successes and mitigates stress associated with setbacks; delineation of rules and roles to guide participant behavior and interactions; and access to tools and resources required to complete tasks.

The environment for this study provided this type of positive setting for staff and students as they collaborated in face-to-face and virtual environments around purposeful, positive activity to produce and share radio shows. Six key focus points are highlighted in Chapter 4-Results, Section-Focus Points. Four of these focus points consider collaboration and socialization: (2) Staff as Mentors, (3) Independence and Collaboration, (5) Socialization and Sharing, and (6) Roundtables.

Pre-WeJay

When staff members were interviewed in the Pre-WeJay phase of the study, all noted that collaboration in the form of group work was valued and important but execution of this form of learning was challenging and problematic because student issues often hindered productive participation. One staff member noted that collaboration was not built into his planning, another tried to pair students up for activities in her English class, but students were unhappy when they could not work with their friends. A science teacher thought that he would attempt a science fair at the end of the year as a means for engaging students in group work. Team sports in physical education class and bands and ensembles in music class afforded natural opportunities for

collaboration. An observation during a music class allowed the researcher to watch several students interacting with each other and with their teacher while practicing a piece of music for an up-coming school-wide production around the music of Bob Marley. Through these productions, the music teacher provided an opportunity for students to showcase their talents.

In the Pre-WeJay stage of the study, social networking was considered by the majority of staff to be problematic. Staff noted that students bullied others on Facebook and inappropriately shared personal information. They also mentioned inappropriate use by adults. One staff member spoke of marriages breaking up as a result of social networking interactions. Another member mentioned repercussions of acting without thinking, "Sometimes they spontaneously write down how they're thinking or feeling…a professional sends an instant message of how they feel, and then the next day they are in jeopardy of losing their job. Also, what you put on, you can't take off." A younger staff member, in the minority in her response, voiced positive feelings, "I enjoy social networking; however, my time is very limited. I have three small kids. I think if it's used in a positive way, it's great."

During WeJay

Table 15 highlights staff recognition of improved student self-regulation in the study space, student increased task value, and staff perceptions associated with social networking. Specifically, in During WeJay Open-Ended Interviews, staff reported improvements in student personal, and behavioral self-regulation and also reported that students required less support from staff to self-regulate while working on their radio shows. The table also highlights responses which reveal a significant increase in student task value and motivation associated with the study space activities. Furthermore, while the student survey instrument was problematic for reasons discussed in Chapter 4-Results, Section-Sample Size and Student

Response, students did give a consistently high rating to questions regarding potential for achievement and persistence around personally valued goals. Additionally, During WeJay Open-Ended Interviews revealed a positive shift in thinking about social networking as evidenced by staff responses. There were no instances of inappropriate behavior as students engaged in chatting and friending during their interactions on WeJay.

Table 15: Self-Regulation, Task Value, & Social Networking

ASSIGNED CATEGORIES	**# Pre-WeJay** Interviews # Text Segments 245		**# Pre-WeJay** Classroom Observations # Text Segments 120		**# During WeJay** Open-Ended Interviews # Text Segments 93	
Self-Regulation - Behavior	29	11.84%	3	2.50%	0	0.00%
Self-Regulation - Support	81	33.06%	151	125.83%	37	39.78%
Self-Regulation - Personal	8	3.27%	27	22.50%	35	37.63%
Task Value/ Motivation	33	13.47%	31	25.83%	64	68.82%
SOCIAL NETWORKING – Staff Value						
Negative Perception	20		No instances of social networking observed.		0	
Positive Perception	10				3 additional positive	
STUDENT SURVEY REPSONSES – Consistently High Ratings for the following questions:						
I will be able to achieve most of the goals that I have set for myself. In general, I think I can obtain outcomes that are important to me. I believe I can succeed at most any endeavor to which I set my mind.						

Observations suggested that various conditions provided support as students became other-focused. This study suggests that the "over-time" dimension of a study should be long enough to engender familiarity, trust, self-efficacy, emotional, and behavioral self-regulation – attributes potentially important to engaging with others (Figure 14).

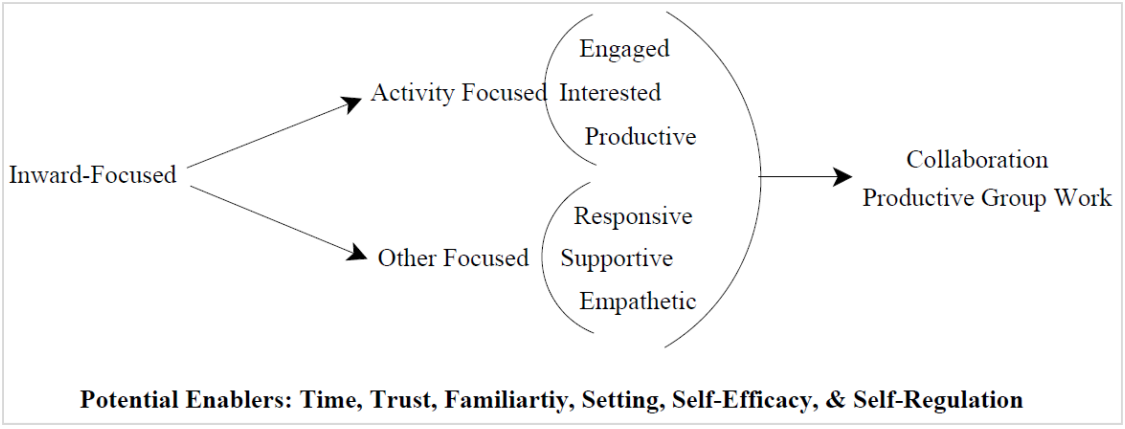


Figure 14: Inward to Outward Focus

In addition to selected collaboration snapshots shared in chapter 4, there were other notable instances related to community building (Figure 15). Some of these instances emerged late in the study. For example, Hawk 27 approached Hawk 28 after he observed Hawk 28 producing his wrestling shows. Hawk 18 agreed to share his thoughts on the economy using an interview format with his staff mentor toward the end of the study. With the support of his mentor, Hawk 7 began writing a script describing three different types of music and nine bands (Appendix Z), but he never produced the show as he was pulled out of several study sessions because he had not completed homework in other subjects.

Other collaborations were interest-based, but did not result in group-produced show. Hawks 15, 16, 17, and 25 collaborated with their mentors to compose music individually. Hawk 7 and Hawk 32 worked together to figure out how to download their music from the iTunes library in order to share on WeJay.

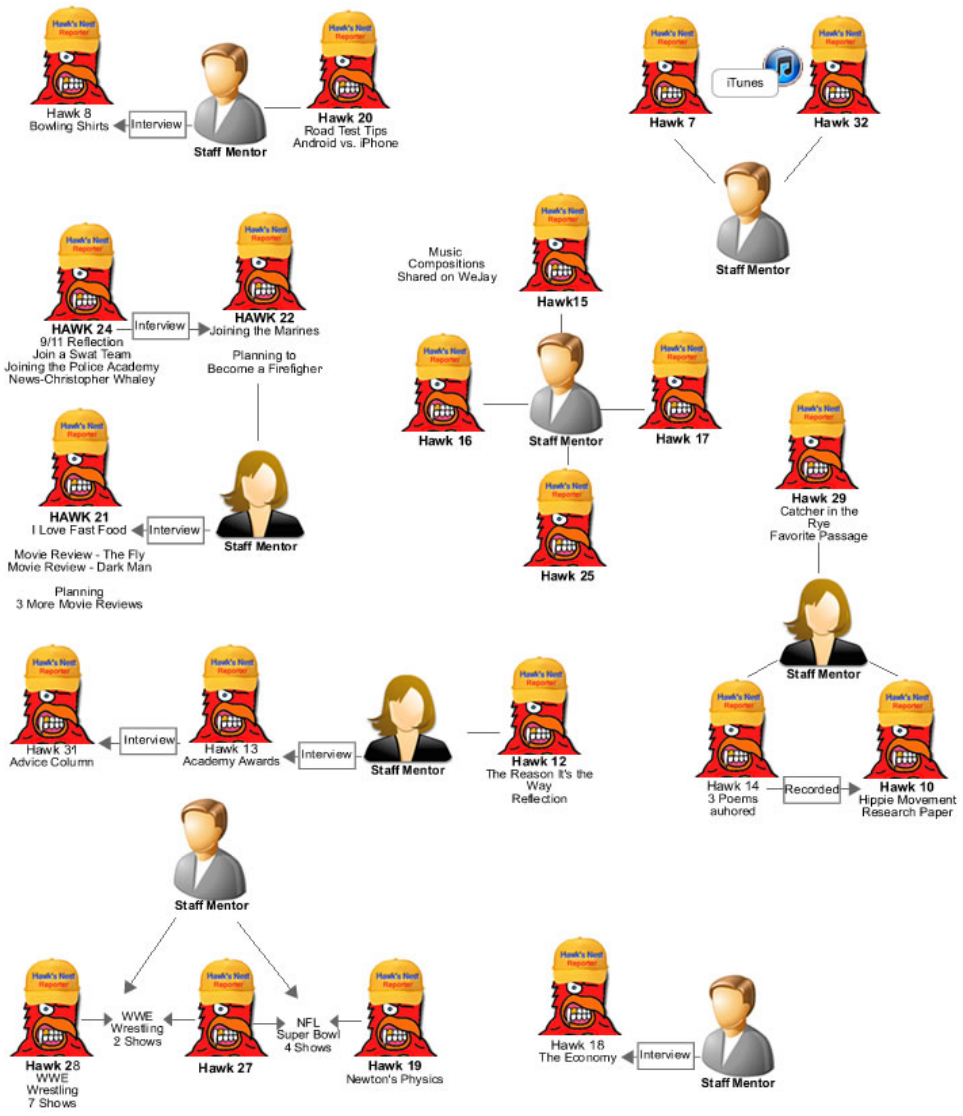


Figure 15: Collaborations Diagram

Suggestions for Future Research

The current study was faithfully executed as designed and data were collected and analyzed through a rigorous process. Students, staff, and administration were enthusiastic throughout the project. Considering the challenges and limitations outlined in the limitation section, there is room for improvement in future studies and the potential exists to implement this study in varied settings to address different types of student populations.

Once all features of WeJay are in place, most importantly the mobile features, it might be interesting to conduct a second study with a new group of students and staff in the high school. While it would be impossible to replicate the study with a similar, diverse population of students, comparing differences in engagement between desktop and mobile versions of WeJay might prove valuable in terms of motivational impact, interest in communicating, collaboration (co-hosting shows), and desire to produce shows.

Future studies should provide more opportunities for students to engage with technologies in networked environments to hone their online communication skills. When possible, professional development for staff participants should precede such studies so that staff can take a more active role in all processes associated with use of new tools.

Data Collection Modifications & Additions

The following data collection modifications and additions are also suggested: (1) the student survey proved problematic as a data collection instrument. Student participants selected random answers and skipped questions when responding. These inaccurate and incomplete responses and the low number of student participants compromised the potential efficacy of the survey as a quantitative source for triangulation with qualitative data. In future studies, the

student survey should be replaced with a pre and post study semi-structured interview addressing the same constructs as the survey. The post-study instrument should also incorporate questions associated with the activities, collaborations, and issues that emerged over the course of the study; (2) an open-ended focus group interview conducted with collaborative teams that emerge over the course of a study; (3) in addition to the staff open-ended interview, a post study semi-structured interview should be administered to ensure collection of data relevant to the specific research questions under consideration including questions that focus on staff perceptions around student development in relation: self-efficacy, self-regulation, collaborative, and communicative competencies.

Unintended Meaningful Impacts

As a result of the positive feedback from staff and administration associated with this study, upon the recommendation of the assistant superintendent of instruction, the superintendent allocated fifty-thousand dollars ($50,000) to build a TV studio in the high school media center. The equipment was installed and training began by the end of the school year with the intent of developing a one-credit elective course called “From Text to Screen” which would allow students to work on the school newsletter, a radio show, and a morning high school newscast. I shared the concept of a 1-credit elective with the principal and the assistant superintendent for student services. Both were enthusiastic and asked if I could work with staff to develop the course for delivery to students in the spring 2013 semester. The following school year, the course would be offered in the fall and spring semesters. Eleventh and 12th graders would have the option to take the course. If students had room in their schedules, they could take it in both their junior and senior years.

Call to Action

> *...every child comes into the classroom in a vehicle propelled by that child alone, for a particular purpose. Here is where the fair study of children begins and where teaching becomes a moral act. (Forward by Robert Coles)*

For over two decades, national, state, and local educational policy has focused on closing the achievement gap, attaining a competitive international standing, and preparing all children to become productive participants in a knowledge-based economy. There is little controversy over the merit of clearly defined standards, articulated curriculum, and accountability; however, the means to the ends are hotly debated. While standards define the "what" of education, it is equally important to attend to the "how," which must take into account the "who" when designing learning environments. Albert Bandura (1997) pointed to those who believed that schools fail to support a segment of the population that struggles in traditional settings: "Not only does it [school] fail to prepare the youth adequately for the future, but all too often it undermines the very sense of personal efficacy needed for continued self-development."

The researcher offers this study as a call to action to address these contradictions, to reconsider and modify practices that undermine rather than support the potential of young people. It is a call which recognizes that students require and deserve numerous opportunities to engage in personally motivating and significant learning throughout their formal schooling. As noted in the introduction to this study, a critical goal for those who work with fragile students is to bolster their resilience, persistence, and participatory and communicative skills. The high school proved to be an exemplary model regarding all calls. To students, parents, and guardians who are wondering, we can hear you and we are listening.

APPENDICES

Appendix A: Key Concepts of Social Cognitive Theory

Glanz et al, (2002:169) outlined the key concepts of the Social Cognitive Theory.

- **Environment:** Factors physically external to the person; Provides opportunities and social support
- **Situation:** Perception of the environment; correct misperceptions and promote healthful forms
- **Behavioral capability:** Knowledge and skill to perform a given behavior; promote mastery learning through skills training
- **Expectations:** Anticipatory outcomes of a behavior; Model positive outcomes of healthful behavior
- **Expectancies:** The values that the person places on a given outcome, incentives; Present outcomes of change that have functional meaning [*My study will consider task value from as formulated by Expectancy-Value Theory*]
- **Self-control:** [**Self-Regulation**] Personal regulation of goal-directed behavior or performance; Provide opportunities for self-monitoring, goal setting, problem solving, and self-reward [*This study will consider both cognitive and emotional self-regulation.]*
- **Observational learning:** Behavioral acquisition that occurs by watching the actions and outcomes of others' behavior; Include credible role models of the targeted behavior
- **Reinforcements:** Responses to a person's behavior that increase or decrease the likelihood of reoccurrence; Promote self-initiated rewards and incentives
- **Self-efficacy:** The person's confidence in performing a particular behavior; Approach behavioral change in small steps to ensure success
- **Emotional coping responses:** Strategies or tactics that are used by a person to deal with emotional stimuli; provide training in problem solving and stress management
- **Reciprocal determinism:** The dynamic interaction of the person, the behavior, and the environment in which the behavior is performed; consider multiple avenues to behavioral change, including environmental, skill, and personal change.

Appendix B: Self-Efficacy & Childhood Depression

Bandura, A., Pastorelli, C., Barbaranelli, C., & Caprara, G. V. (1999).

Figure 1.

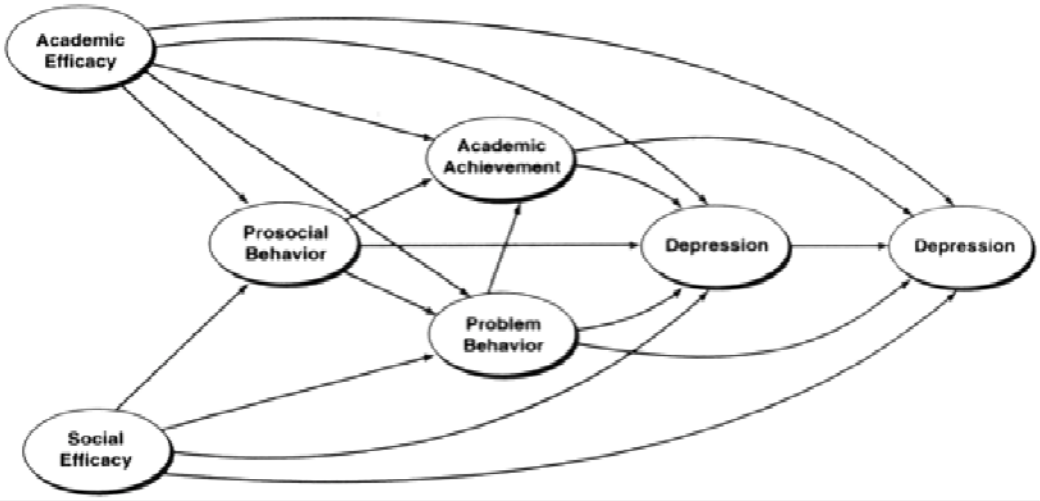


Figure 1. Posited causal structure of the paths of influence through which beliefs of personal efficacy operate in concert with sociocognitive factors to affect childhood depression

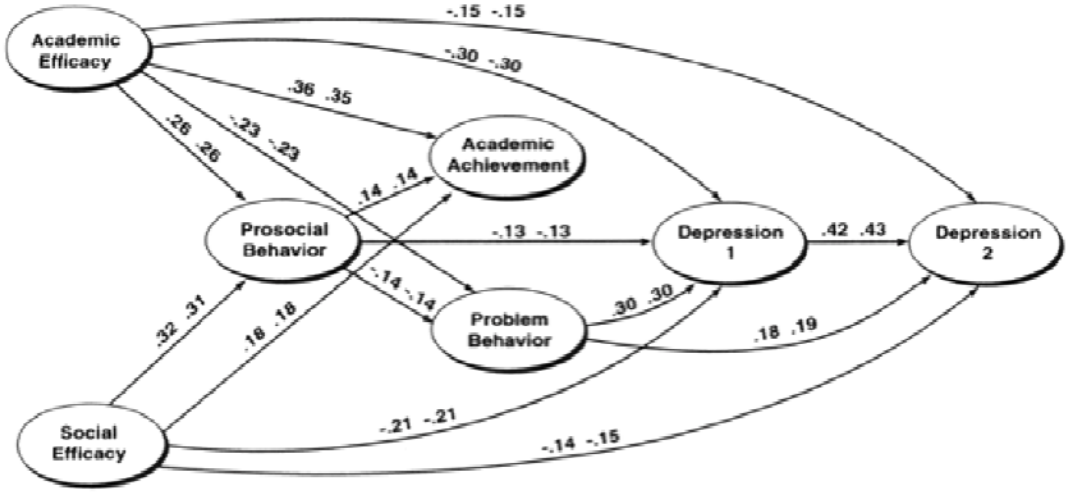


Figure 2. Path analysis of the direct and mediated paths of influence through which efficacy beliefs affect level of depression 1 year later. The first path coefficient on each of the structural links is for boys; the second coefficient is for girls. The causal structure was comparable across gender. All of the path coefficients are significant beyond the $p < .05$ level

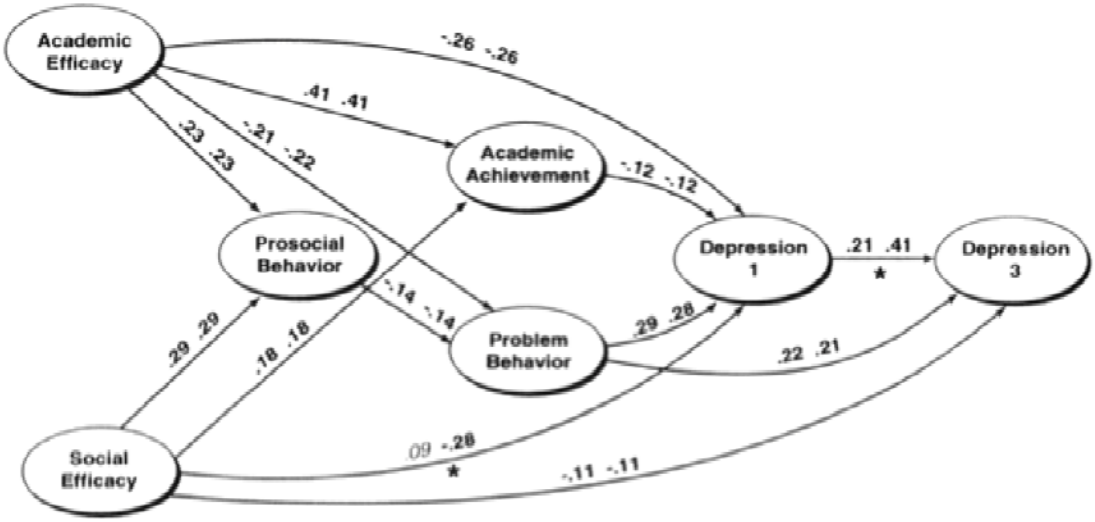


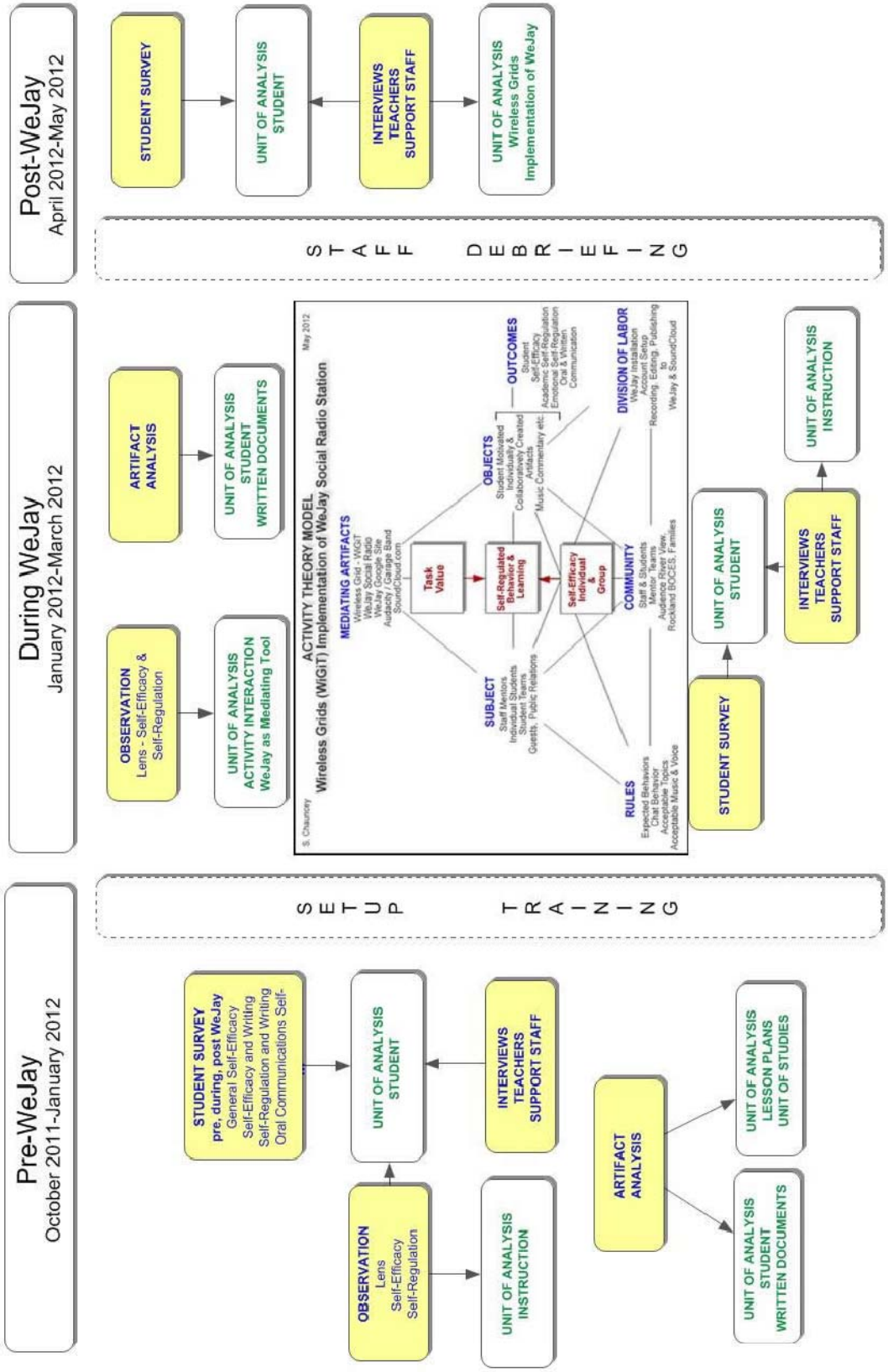
Figure 3. Path analysis of the direct and mediated paths of influence through which efficacy beliefs affect level of depression 2 years later. The first path coefficient on each of the structural links is for boys; the second coefficient is for girls. All of the path coefficients are significant beyond the p < .05 level, except that perceived social inefficacy is unrelated to Time 1 depression for boys. The coefficients with an asterisk on the paths differ significantly across gender

Appendix C: Sources of Self-Efficacy Information

Bandura 1977 & others

Mastery Experiences	**Vicarious Experience**	**Verbal (Social) Persuasion**	**Physiological & Emotional States**
Direct experience	Live modeling	Feedback from teachers	Sweaty palms
Performance exposure	Symbolic modeling	Expectations from peers	Rapid heartbeat
Self-instructed performance	Media	Suggestion	Attribution
Participant modeling		Exhortation	Relaxation
Actual Performance		Self-instruction	Biofeedback
Achievements		Interpretive treatments	Symbolic desensitization
Experience			Symbolic exposure
Performance desensitization			

Appendix D: Methods Flow Model



Appendix E: Student Survey Instrument

Note: The instrument was printed using a 12 pt fond on legal paper to keep each section on a single page.

Name: _____ Grade: _____ Date:_____

SECTION 1: ACHIEVING MY GOALS

This section asks for information about the degree of confidence you have in achieving goals and completing tasks. Remember, this is not a test, and there are no right or wrong answers.

CIRCLE ONE RESPONSE FOR EACH OF THE FOLLOWING ITEMS.

	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
1. I will be able to achieve most of the goals that I have set for myself.	1	2	3	4	5
2. When facing difficult tasks, I am certain that I will accomplish them.	1	2	3	4	5
3. In general, I think that I can obtain outcomes that are important to me.	1	2	3	4	5
4. I believe I can succeed at most any endeavor to which I set my mind.	1	2	3	4	5
5. I will be able to successfully overcome many challenges.	1	2	3	4	5
6. I am confident that I can perform effectively on many different tasks.	1	2	3	4	5
7. Compared to other people, I can do most tasks very well.	1	2	3	4	5
8. Even when things are tough, I can perform quite well.	1	2	3	4	5

SECTION 2 ON THE NEXT PAGE

SECTION 2: - WHEN I WRITE

This section asks for information about the degree of confidence you have in achieving writing goals. Remember, this is not a test, and there are no right or wrong answers.

CIRCLE ONE RESPONSE FOR EACH OF THE FOLLOWING ITEMS.

	I do not do it well at all.	**I do not do it well.**	**I do it well.**	**I do it very well.**
1. I can write an interesting and appropriate response to a given topic.	1	2	3	4
2. I can easily cover all the information that should be dealt with in a given topic.	1	2	3	4
3. I can use an appropriate writing style for the task.	1	2	3	4
4. I can generate ideas to write about easily.	1	2	3	4
5. I can think of ideas rapidly when given a topic to write about.	1	2	3	4
6. I can write on an assigned topic without difficulty.	1	2	3	4
7. I can easily find examples to support my ideas.	1	2	3	4
8. I can write grammatically correct sentences in my compositions.	1	2	3	4
9. I can edit my compositions for mistakes such as punctuation, capitalization, paragraphing.	1	2	3	4
10. I can link ideas together easily.	1	2	3	4
11. I can use transition words correctly to make my composition a better one.	1	2	3	4
12. I can use a wide range of vocabulary in my compositions.	1	2	3	4
13. I can use synonyms in a composition rather than repeating the same words over and over again.	1	2	3	4
14. I can write a brief and informative overview of a given topic.	1	2	3	4

15. I can manage my time efficiently to meet a deadline on a piece of writing.	1	2	3	4
16. I can rewrite my wordy or confusing sentences to make them clearer.	1	2	3	4
17. I can choose and defend a point of view.	1	2	3	4
18. I can fulfill a writing task without difficulty within a given time limit.	1	2	3	4

SECTION 3 ON THE NEXT PAGE

SECTION 3: MANAGING MY WRITING

This section asks for information about how you plan, carry out and reflect on your writing.

Remember, this is not a test, and there are no right or wrong answers.

CIRCLE ONE RESPONSE FOR EACH OF THE FOLLOWING ITEMS.

	Never	Sometimes	Often	Always
PLANNING MY WRITING				
1. I create goals for every writing task I need to accomplish.	1	2	3	4
2. I plan the contents of the things that I will write.	1	2	3	4
3. I take note of my purpose for a specific writing task.	1	2	3	4
4. I think of my target audience and reason for writing a certain piece.	1	2	3	4
5. I set a specific time in which I would write.	1	2	3	4
6. I visualize my written output first before I begin writing.	1	2	3	4
7. I have a certain length in mind for the paper that I will work on.	1	2	3	4
8. I brainstorm for ideas before I write.	1	2	3	4
9. I use graphic organizers to manage my ideas.	1	2	3	4
10. I create an outline before I write.	1	2	3	4
DURING WRITING				
11. I create a draft before writing the final paper.	1	2	3	4
12. I use certain writing strategies such as annotating, outlining, etc. whenever doing a writing task.	1	2	3	4
13. I proofread my work.	1	2	3	4

14. I aim to create a paper with no grammatical errors.	1	2	3	4
15. I ask my peers to edit my writing.	1	2	3	4
16. I ask a teacher to evaluate my writing and give suggestions for revising.	1	2	3	4
17. I use word processing software to check for errors in my writing.	1	2	3	4
18. I reread my work several times to look for errors in my writing.	1	2	3	4
19. I use the writing approach of planning, organizing, writing, editing and revising.	1	2	3	4
20. I take into consideration the comments of other people about my writing.	1	2	3	4
21. I like talking with my friends while doing a writing task.	1	2	3	4
22. I prefer having people or friends around when I write so that I can gather more ideas from them.	1	2	3	4
23. I don't let others disturb me when I am writing.	1	2	3	4
24. I accomplish all my writing tasks at my own pace.	1	2	3	4
25. I usually do my writing tasks in a quiet place where there isn't much noise.	1	2	3	4
DURING WRITING				
26. I like to multi-task (work on more than one thing) whenever I write.	1	2	3	4
27. I don't like writing in a crowded place.	1	2	3	4
REFLECTING ON MY WRITING				
28. When I receive a low mark on a certain writing activity, I will plan my next activity in a more detailed manner.	1	2	3	4
29. I read more so that I have a wide range of knowledge for the next writing task.	1	2	3	4

30. I take note of the comments of the teacher and make sure that I apply them in the next writing activity.	1	2	3	4
31. I read my work carefully and look for where I may have made an error.	1	2	3	4
32. I ask my teacher for possible improvements I can make in my written outputs.	1	2	3	4
33. I keep a writing portfolio so that I can see the progress and development of my writing.	1	2	3	4
34. I eliminate distractions that might have interfered with my writing.	1	2	3	4
35. I'll extensively familiarize myself with the next topic I will write about.	1	2	3	4
36. I'll use a thesaurus to enrich my writing and vocabulary in the next writing activity.	1	2	3	4
37. I'll read aloud what I have written so that I can check what sounds good and what doesn't.	1	2	3	4
38. I will look for ways to ensure that the audience of my next writing task will be interested in my composition.	1	2	3	4

SECTION 4 ON THE NEXT PAGE

SECTION 4: ORAL PRESENTATIONS

This section asks for information about how you rate your effectiveness in speaking. Of course, there are no right or wrong answers to such questions, just select the answer that best applies to you.

CIRCLE ONE RESPONSE FOR EACH OF THE FOLLOWING ITEMS.

	Always True	**Mostly True**	**Mostly False**	**Always False**
1. I don't mind asking the teacher a question in class.	1	2	3	4
2. Sometimes I can't figure out what to say.	1	2	3	4
3. It is harder for me to give a report in class than it is for most of the other kids.	1	2	3	4
4. I like the way I talk.	1	2	3	4
5. People sometimes finish my words for me.	1	2	3	4
6. I find it easy to talk to most everyone.	1	2	3	4
7. It is hard for me to talk to people.	1	2	3	4
8. I don't worry about the way I talk.	1	2	3	4
9. I don't find it easy to talk in front of other people.	1	2	3	4
10. It is easy for me to figure out what to say.	1	2	3	4
11. I'm afraid that kids will make fun of me when I talk.	1	2	3	4
12. Talking is easy for me.	1	2	3	4
13. Telling someone my name is hard for me.	1	2	3	4
14. I talk well with most everyone.	1	2	3	4
15. I would rather talk than write.	1	2	3	4
16. I like to talk.	1	2	3	4
17. I am not a good talker.	1	2	3	4
18. I wish I could talk like other students	1	2	3	4
19. I let others talk for me	1	2	3	4

20. Reading aloud in class is easy for me	1	2	3	4
21. I am good at sharing my ideas during class	1	2	3	4
22. I like to answer questions that people ask me	1	2	3	4
23. I worry about asking questions during class	1	2	3	4

Appendix F: Staff Pre-WeJay Semi-Structured Interview Protocol

Name: _____ Position: _____ Date:_____

1. Demographic information: (e.g., staff position, years experience, education, age)

2. Perceptions of student knowledge and skills – writing
*Moved here from 13th question as result of interview pilot

3. Perceptions of student knowledge and skills – oral communications
*Moved here from 14th question as result of interview pilot

4. Role of staff in supporting written communications skills:

5. Role of staff in supporting oral communications skills:

6. Role of staff in supporting collaboration skills:

7. Methods employed to support collaboration:

8. Methods employed to support and build student general self-efficacy:

9. Methods employed to support and build student writing self-efficacy:

10. Methods employed to support and build student speaking self-efficacy:

11. Methods employed to support and build student general self-regulation:

12. Methods employed to support and build student writing self-regulation:

13. Attitude toward and experience with social networking:

14. Perceived challenges with social networking:

Appendix G: Staff Pre-WeJay Observation Protocol

Date: _____ Activity: _____

Purpose / Goals of Instruction	Skills / Concepts Presented	Resources Used:
Activity observed:		
Teaching Strategies:	Student Assignments, Activities, and Strategies:	
Assessment Criteria:		

Observation Notes	**Attentive to…**	
	SELF-EFFICACY Based on Bandura's (1982) self-efficacy acquisition in social learning environments. Mastery Experience Performance Attainment Vicariously Observing Experiences of Others Verbal Persuasion by influential persons and others considered allies, similar to oneself. Experiences of physiological states associated with self-appraisal.	ACTIVITY THEORY CHECKLIST Evaluation Of WeJay Interaction derived from Kaptelinin & Nardi, 2006:276-77 APPENDIX X

Appendix H: National Dissemination Center for Students with Disabilities

http://nichcy.org/laws/idea/

Autism
Deaf-blindness
Deafness
Developmental delay
Emotional disturbance
Hearing impairment
Intellectual disability
Multiple disabilities
Orthopedic impairment
Other health impairment
Specific learning disability
Speech or language impairment
Traumatic brain injury
Visual impairment, including blindness

Appendix I: Johns Hopkins Disabilities Services

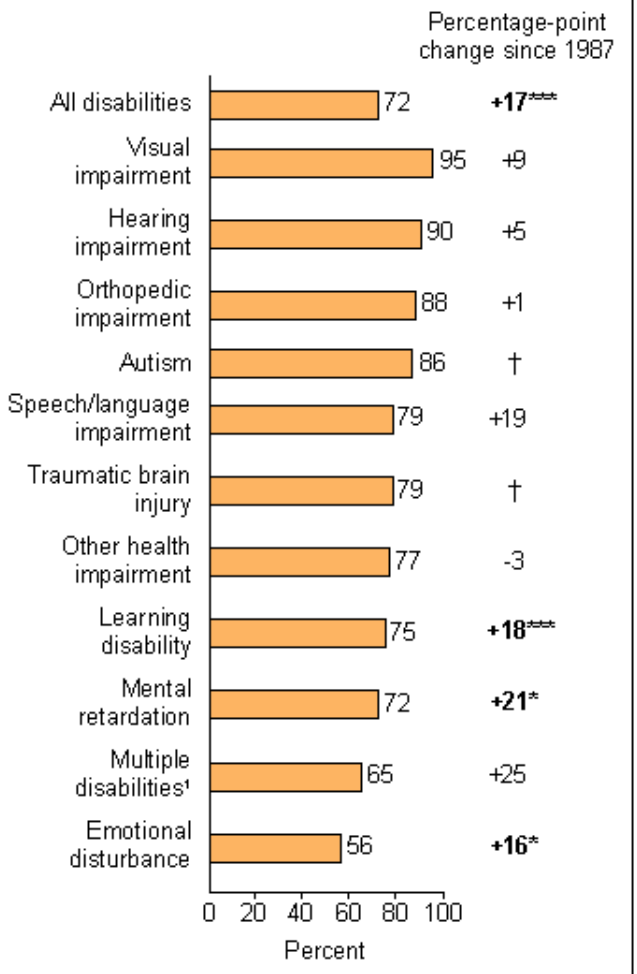
http://web.jhu.edu/disabilities/faculty/types_of_disabilities/

Attention-Deficit/Hyperactivity Disorders
Blindness or Low Vision
Brain Injuries
Deaf/Hard-of-Hearing
Learning Disabilities
Medical Disabilities
Physical Disabilities
Psychiatric Disabilities
Speech and Language Disabilities

Appendix J: High School Completion by Youth with Disabilities

Source: U.S. Department of Education (2005). Facts from NLTS2: High School Completion by Youth with Disabilities. Washington, DC: Institution of Educational Sciences.
http://ies.ed.gov/ncser/pdf/NLTS2_selfdeterm_11_23_05.pdf

Figure 1. Reported high school completion status, by federal statutory disability category



*p < .05, ***p < .001.
† Not applicable; these categories were not in use in 1987.
¹ Includes the category of deaf-blindness.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Special Education Research, National Longitudinal Transition Study-2 (NLTS2), "Wave 2 Parent/Youth Interview, 2003."

Appendix K: Original New General Self-Efficacy Scale

Source: Chen, Gully, & Eden. (2001: Appendix)

New General Self-Efficacy Scale

1. I will be able to achieve most of the goals that I have set for myself.

2. When facing difficult tasks, I am certain that I will accomplish them.

3. In general, I think that I can obtain outcomes that are important to me.

4. I believe I can succeed at most any endeavor to which I set my mind.

5. I will be able to successfully overcome many challenges.

6. I am confident that I can perform effectively on many different tasks.

7. Compared to other people, I can do most tasks very well.

8. Even when things are tough, I can perform quite well.

Appendix L: Original Self-Efficacy in Writing Scale (SWS)

Source: Yavuz-Erkan, & Saban. (2011)

* eliminated for this study's survey instrument.

Writing Efficacy Scale
Read each statement below and then use the following scale to indicate various degrees of effectiveness. Of course, there are no right or wrong answers to such questions, so do not spend too much time on any one statement, but select the answer that best applies to you. Thank you for your cooperation.
4= I do it very well 3=I do it well 2= I do not do it well 1= I do not do it well at all

1. I can write interesting and appropriate responses to a given topic
2. I can easily cover all the information that should be dealt with in a given topic.
3. I can use appropriate style to the task.
* 4. I can easily match style with topic
5. I can generate ideas to write about easily.
6. I can think of ideas rapidly when given a topic to write about.
7. I can write on an assigned topic without difficulty.
8. I can easily find examples to support my ideas.
* 9. I can justify my ideas in my compositions.
10. I can write grammatically correct sentences in my compositions.
* 11. I can use complex language in writing without difficulty.
* 12. I can produce error free structures.
* 13. I can spell very well.
* 14. I can use the punctuation correctly.
15 I can edit my compositions for mistakes such as punctuation, capitalization, paragraphing.
* 16. I can easily use structures I have learned in my class accurately.
17. I can link ideas together easily.
18. I can use transition words correctly to make my composition a better one.
*19. I can use connectors correctly to make my composition a better one.
20. I can use a wide range of vocabulary in my compositions.
21. I can use synonyms in a composition rather than repeating the same words over and over again.
22. I can write a brief and informative overview of a given topic.
23. I can manage my time efficiently to meet a deadline on a piece of writing.
24. I can rewrite my wordy or confusing sentences to make them clearer.
* 25. I can extend the topic to fit in a given word limit.
26. I can choose and defend a point of view.
* 27. I can make long and complex sentences.
28. I can fulfill a writing task without difficulty within a given time limit.

Appendix M: Original Self-Regulation Scale Conceptualized in Writing

Source: Kanlapan & Velasco (2009)

Abstract
Self-regulation integrates learning behaviors or strategies, motivation, and metacognition. In the context of academic writing, it is believed that self-regulation, as manifested through self-reflective and self-evaluative activities, may predict one's writing success. The present paper aims to develop a self-regulation scale contextualized in written communication skills. It made use of Zimmerman's (2002) characterization of the self-regulation processes namely: (1) setting specific proximal goals for oneself, (2) adopting powerful strategies for attaining the goals, (3) monitoring one's performance selectively for signs of progress, (4) restructuring one's physical and social context to make it compatible with one's goals, (5) managing one's time use efficiently, (6) self-evaluating one's method, (7) attributing causation to results, and (8) adapting future methods. It was found that these perceived eight factors of self-regulation can be better concretized if placed under the three-stage model of self-regulation which involves the forethought phase, the performance phase, and the reflection phase.

3-Stage Model of Self-Regulation Scale in Writing

Stage 1: Forethought

Setting specific proximal goals for oneself – this segment of self-regulation deals with the formulation of objectives that will be achieved for a specific task.

1. Before I write, I set my mind that I would finish my written output.
2. I set standards for my writing.
3. I create certain goals for every writing task I need to accomplish.
4. I plan the contents of the things that I would write.
5. I make my own guidelines for my written output.
6. I take note of my purpose in a specific writing task.
7. I think of my target audience and reason for writing a certain piece.
8. I drive myself to be resourceful in my writing.
9. I set a specific time in which I would write.
10. I always intend to make my written outputs of high quality.
11. I visualize my written output first before engaging in it.
12. I have a certain length in mind for the paper that I will work on.
13. I aim to create a paper with no grammatical errors.
14. I aspire to create a paper that will satisfy the readers.
15. I seek to compose a paper that uses comprehensible vocabulary.

Adopting powerful strategies for attaining the goals- This phase of self-regulation entails that the individual utilizes appropriate strategies for a task in which the objectives will be achieved.

1. I brainstorm for ideas before I write.
2. I use graphic organizers to manage my ideas.
3. I use the free-writing strategy to garner several thoughts.
4. I create an outline before I write.
5. I create a draft before writing the final paper.
6. I modify my paper if I'm not contented with it.

7. I use certain writing strategies such as annotating, outlining, etc. whenever doing a writing task.
8. I proofread my work.
9. I ask my peers to edit my writing.
10. I ask ~~professionals~~ ***a teacher*** to evaluate my writing and give suggested revision
11. I use word processing software to check errors in my writing.
12. I reread my work several times to find some errors in my writing.
13. I check my work on the general level then to the sentence level.
14. I know and use the writing approach of planning, organizing, writing, editing and revising.
15. I take into consideration the comments of other people about my writing.

Stage 2: Performance

Restructuring one's physical and social context to make it compatible to one's goal- Among the key types of self-control methods that have been studied to date are the use of imagery, self-instruction, attention focusing, and task strategies

1. I avoid watching television when I am finishing a writing task.
2. I avoid using my cell phone whenever I am writing a composition.
3. I usually finish my writing tasks late at night.
4. I isolate myself in quiet places whenever I do my writing tasks.
5. I can write efficiently when I am working in a clean and quiet environment
6. I am able to finish a writing task when I am listening to music.
7. I like talking with my friends while doing a writing task.
8. I prefer having people or friends around when I write so that I can gather more ideas from them.
9. I don't let others disturb me when I am writing.
10. I like finishing my compositions early in the morning.
11. I accomplish all my writing tasks at my own pace.
12. I see to it that my things are fixed before I begin with writing.
13. I usually do my writing tasks in a quiet place where there isn't much noise.
14. I like to multi-task whenever I write.
15. I don't like writing in a crowded place.

Managing one's time efficiently- self-regulated learners usually use several strategies so that they fit all their pending tasks to their availability.

1. I create a time table of the writing outputs I need to accomplish.
2. I keep a separate planner for all my writing tasks.
3. I use post-its to keep track of the writing tasks I need to accomplish
4. I immediately accomplish the writing tasks I need to accomplish during my free time.
5. I finish all my compositions weeks before its deadline.
6. I keep a calendar where all the deadlines of my writing outputs are written.
7. I create a checklist of all the writing tasks I need to finish.
8. I see to it that I finish my writing tasks before their deadline.
9. I keep a notebook where I list a schedule of my daily writing activities.
10. I gradually finish my writing tasks whenever I have nothing to do.
11. I immediately start with the writing task as soon as the teacher gives it.
12. I accomplish all my writing tasks before doing unnecessary things.
13. I set an alarm for every writing task I have scheduled.
14. I allot a specific time for every writing task.
15. I use daily logs to track the writing tasks I have already accomplished.

Stage 3: Reflection

Evaluating one's method- refers to comparisons of self-observed performances against some standard, such as one's prior performance, another person's performance, or an absolute standard of performance

1. If the drafts of my outputs are not getting good marks, I ask an English teacher for help.
2. I make necessary revisions in my compositions whenever the teacher suggests me to.
3. I edit errors in my compositions before I submit them to the teacher.
4. I like proof-reading activities in class.
5. I enjoy writing workshops because I am given ideas for points for improvements.
6. I take down the comments of everyone who reads my writing outputs.
7. I browse through my drafts to check the progress of my writing.
8. I am open to feedbacks which can help improve my compositions.
9. I cross check if my writing output matches the outline I created.
10. I ask others what changes should be done in my composition for further improvements.
11. I evaluate my written outputs after every session.
12. I take note of the improvements in my written outputs.
13. I benefit from peer-editing activities.
14. I create my own rubric to check my own written output.
15. I make a list of the things I need to improve on in my written outputs.

Adapting future methods- This phase of self regulation bring about the use of potential techniques that can be used to enhance output.

1. When I receive a low mark on a certain writing activity, I will plan my next activity in a more detailed manner.
2. I read more so that I have a wide range of knowledge for the next writing task.
3. I take note of the comments of the writing instructor and make sure that I apply it in the next writing activity.
4. I read my work carefully and seek where I committed an error.
5. I ask my teacher for possible improvements I can make in my written outputs.
6. I ~~compile my work~~ ***keep a writing portfolio*** so that I can see the progress and development of my writing.
7. I ask someone to tutor me for the next writing task.
8. I eliminate distractions that might have interfered with my writing.
9. I experiment with writing strategies to see what suits me best.
10. I make sure that my writing appeals to the one who'll read it.
11. I'll extensively familiarize myself with the next topic I will write about.
12. I'll use thesaurus to enrich my writing and vocabulary in the next writing activity.
13. I will ponder intently for my next writing task.
14. I'll read aloud what I have written so that I can check what sounds good and what doesn't.
15. I will ensure that the audience of my next writing task will be interested in my composition.

Appendix N: Original Self-Efficacy in Oral Communications

Source: Huang, Leon, Hodson, La Torre, Obregon, & Rivera. (2010).

This study addressed key questions about LA's BEST afterschool students' self-efficacy, collaboration, and communication skills. We compared student perceptions of their own 21st century skills to external outcome measures including the California Standardized Test (CST), attendance, and teacher ratings. We found a substantial relationship between student self-efficacy compared to student oral communication and collaboration skills. However, we did not find that higher attendance in LA's BEST led to higher self-efficacy, though further investigation is needed. We found that LA's BEST students were able to evaluate their abilities so that they are similar to the outcome measures of CST and teacher ratings. Moreover, the high-attendance group demonstrated significantly better alignment with the teacher ratings than the lower attendance groups in self-efficacy, oral communication skills, and collaboration skills.

* eliminated for this study's survey instrument.

p.47
Factor Parcel
Items Oral communication Interpersonal_Positive (IP) 2, 7, 15, 21, 22, 23
Interpersonal_Negative (IN) 4, 6, 8, 10, 14, 19, 20, 24
Personal_Positive (PP) 5, 9, 11, 13, 16, 17
Personal Negative (PN) 1, 3, 12, 18

p. 48
* 1. I don't talk right PN
2. I don't mind asking the teacher a question in class IP
3. Sometimes I can't figure out what to say PN
4. It is harder for me to give a report in class than it is for most of the other kids IN
5. I like the way I talk PP
6. People sometimes finish my words for me IN
7. I find it easy to talk to most everyone IP
8. It is hard for me to talk to people IN
9. I don't worry about the way I talk PP
10. I don't find it easy to talk in front of other people IN
11. It is easy for me to figure out what to say PP
12. I'm afraid that kids will make fun of me when I talk PN
13. Talking is easy for me PP
14. Telling someone my name is hard for me IN
15. I talk well with most everyone IP
16. I would rather talk than write PP
17. I like to talk PP
18. I am not a good talker PN
19. I wish I could talk like other children PN
20. I let others talk for me IN
21. Reading aloud in class is easy for me IP
22. I am good at sharing my ideas during class IP
23. I like to answer questions that people ask me IP
24. I worry about asking questions during class IP

Appendix O: Coding Glossary

Category Code	SubCategory Code	Definition	Text Sample
Collaboration - Opportunities	Challenges	Challenges to collaboration which staff experience in classroom settings -- associated with learning, emotional, behavioral	But as far as their regular work collaborating, I'd say there are pockets of kids who will work together. But there is no formal time yet for collaboration. That's going to happen as we get through the unit we're working on now is kind of like a foundation unit.
Collaboration - Opportunities	Staff Initiated	Collaboration opportunities which are facilitated by staff members.	I do the tables, right. I do the tables and literacy, and it's almost like they don't even know what hit them. You know, they just, I just go, here you go, table 1, here's your job and table 2 and then they swap, and they do. So I do that, but – and I'm certainly going to look at this class, the journalism group here, because you got me going there, now. How do I get them to feel, like you know, this is a group effort.
Collaboration - Opportunities	Student Initiated	Collaboration opportunities which are initiated by students - student with other students, student with staff.	[Regarding desire to work together] They do if they can choose who they're going to work with. If I pair them up, they're very resistant. They like to be specifically around their same friends, than, you know, they get comfortable with a specific mix of students.
Collaboration - Purpose	Decision Making	Collaboration initiated to facilitate group decision making.	Well we have a lot of group tasks that they have to do in social skills groups, that we'll have them divide into smaller groups, in two or three in different specific tasks to accomplish together, so that they can learn how to work with other kids who come to the consensus and make decisions….
Collaboration - Purpose	Home-School Communication	Collaboration initiated to facilitate communication with parents and guardians.	We have a crisis team here … We keep in contact with their parents.
Collaboration - Purpose	Learning	Collaboration whose purpose is to facilitate learning.	Collaborating, also the other part of collaboration is peer tutoring; I will try to get one student who is good in the subject to help another student during resource, or even during group; get one student to help another student try to solve a situation they're in.

Collaboration - Purpose	Planning	Collaboration initiated to facilitate group planning.	Right after the holiday, one of the groups I think I remember doing, _____ they're going tomorrow and you can only take six things, what are the six things you know, but we have like flashcards and pictures of 25 things that they can look at. We don't make them come up with, you know, _____ all different things, but we have a bunch of cards that they can look at and say, oh yeah, I need that.
Collaboration - Purpose	Problem Solving	Collaboration initiated to facilitate group problem solving.	And we talk about what we need that for. And then we talk about how important it is, and then we go on to the next thing, and then they have to as little groups, decide what six things they're gonna take, because that's all they have room for.
Collaboration - Purpose	Projects / Producing	Collaboration initiated to facilitate group project undertakings and production of content.	Well a method would be, we haven't gotten that deep into it, but if they're working on English, Shakespeare, we could maybe get the music of that theme or music of that era. Ummm, to kill two birds with one stone, they would be working on their reports, per se, and we would be doing the music part of the era that would be a way, a method.
Collaboration - Purpose	Social	Collaboration which facilitates social interaction among students, students and staff.	I don't have it. I'm from Bedrock, the Stone Age. No, you know what, everybody around me does. I just don't do it. I mean, I use the computer and I pay my bills and I read and do other things, but I don't have any of that social networking stuff
Collaboration - Support	Debriefing Student Issues	Collaboration amongst staff members to discuss student issues to get ideas and input from multiples staff members - this is somewhat reactive. (Also see Proactive Identify Student Needs)	We collaborate with their teacher, student, clinician, so we all work together to help know that student, identify their needs and their weaknesses
Collaboration - Support	Identify Student Needs	Collaboration to bring various staff members into a conversation around addressing of student needs. (This is proactive collaboration while Debriefing Student Issues is somewhat reactive.)	

Collaboration - Support	Modeling	Collaboration which is facilitated through modeling by staff.	Mainly, to just, and I think a lot of them do this already, but mainly to have them working in small groups as much as they can. So that they foster that interaction and model it. I mean, we model it for them by the way we interact, and when I'm sitting in a classroom, which often times, clinicians are in the classroom during class, so how we interact with each other as staff members is also -- as to how they should do it with each other.
Instruction	Approaches	Approaches employed to support learning.	and then sometimes, I have one student come up to the Smartboard and I have them act like the teacher and they ask questions to the students. And we sometimes do presentations too.
Instruction	Communications Overall	References to instruction related to communications in general -- may include oral, written, multimedia etc.	Okay, well the role of the staff in supporting communication skills is very depending on whether you're a teacher or teacher assistant and a clinician. Teachers of course, English teachers especially and Social Studies teachers, they have the largest role in trying to develop it and modify it to their discipline area, and it, the clinicians and the teaching assistants support that process.
Instruction	Learning Environment	References to atmosphere, practices etc. associated with classroom setting (may overlap with Self-Regulation Environmental Structuring)	Well, I make the atmosphere comfortable enough that they can express when they're confused or they need something repeated, or they don't understand. So they're not afraid of –
Instruction	Oral Communications	References to oral communications instruction.	There is a lot of discussion that goes on during lab work. It's generally once a week. I reserve lab dates for Friday. Its, I've seen cases where once student is helping another, helping communicate the ideas, but in general there's really not much of students standing up and presenting material.
Instruction	Other	References to instruction in general.	A lot of support. A lot of embedded video, audio. We also use online textbooks which can actually read the book to them while they're reading along.

Instruction	Writing	References to writing instruction.	Well a method would be, we haven't gotten that deep into it, but if they're working on English, Shakespeare, we could maybe get the music of that theme or music of that era. Ummm, to kill two birds with one stone, they would be working on their reports, per se, and we would be doing the music part of the era that would be a way, a method.
Instruction Challenges	Assessments	Instructional challenges associated with assessment alignment to curriculum and student disabilities, administration, value of data (positive, negative), etc.	
Instruction Challenges	Mandates	Instructional challenges which associated with school, state, federal mandates that are not aligned to the needs of students.	You know the school districts require them to go through at least freshman and sophomore years before they're given a half-day program to go to an Oc Ed and they're frustrated by that. It's like my friend who is a junior gets to go to Oc Ed and I don't. I have to sit here and earn all these credits and what's it ever going to do for me if I want to be a carpenter? How do you argue with that?
Instruction Challenges	Resources	Instructional challenges associated with lack of or inappropriate teaching and learning resources -- materials, computers, lab equipment etc.	I have and they're so backed up I can try to much them up in the queue for you if it affecting teaching and learning ... this point, the only thing it's handcuffing me on is that I can't do experiments in physics because of lack of equipment. I was hoping the virtual labs would help. But we're moving at such a rapid pace right now because of that motivation, I don't think they are missing out on much…
Instruction Challenges	Safety	Instructional challenges associated with safety issues, i.e. Science labs which require use of dangerous chemicals.	It's not necessarily lack of materials, its also (pause).. safety with some of the population we have. Yes, safety in using the materials. We had a lab on PH and we had some strong acids I just did not trust, if that's the proper word, in having the kids handle a beaker of hydrochloric acid on their own. That's part of the reason we don't really do dissections anymore.

Instruction Challenges	Student Cognitive	Instructional challenges associated with student cognition disabilities / challenges.	As hard as I'm working and as good as my grades are, I may not pass this exam because my teacher may be giving me a test that is geared to my level but it's not geared toward Regent's level." We try to bring their abilities up by giving them Regents type questions but some kids aren't just going to get there and it's just unfortunate that we are forced to have these high-stakes tests.
Instruction Challenges	Student Emotional / Behavioral	Instructional challenges associated with student emotional / behavioral disabilities / challenges.	They're motivated to learn. But they do have emotional disabilities that do get in their way at some point but they don't have the pressure on them because this is not a physics class that leads to a Regents exam. This is a non-Regents class so there is no pressure.
Instruction Challenges	Student Social	Instructional challenges associated with student social disabilities / challenges.	
Instruction Challenges	Time	Instructional challenges associated with lack of time, disjointed time, student disabilities which deal with time required to complete tasks etc.	But when the end result is you have to prepare them for this high stakes test they have to have reached this type of questions on their test. [right] So how are they going to learn if we're only teaching to the test? There is so much more I could teach them that deals with biology that they would enjoy learning but I can't 'cause there's not enough time because we have to take the test.
Self-Efficacy	Construct - Mastery experiences	Mastery experiences, "the interpreted results of one's purposive performance," are considered the most influential of the four sources which influence self-efficacy. (Bandura, 1997, Pajares, 2006, Pajares et al, 2007) "The most effective way of developing a strong sense of efficacy is through mastery experiences," Bandura explained (1994). Performing a task successfully strengthens our sense of self-efficacy. However, failing to adequately deal with a task or challenge can undermine and weaken self-efficacy.	Alright, well what I've observed generally speaking, I mean, I'm going to keep it on the high school level, with my experience at BOCES in the last ten years, but basically, writing is the least developed skill that our students have, especially in the language area, and so most of them have difficulty knowing what a topic sentence is, writing a paragraph, anything to do with punctuation.

Self-Efficacy	Construct - Physiological and emotional states	Physiological arousal is also known as affective arousal (Smith, 2002) and emotional arousal (Hagen et al., 1998). Schunk (1989a, p. 174) notes that, "Students also derive efficacy information from physiological indexes (e.g., heart rate, sweating). Bodily symptoms signaling anxiety might be interpreted to mean one lacks necessary skills." However, physiological arousal does not always portend diminished self-efficacy. It is not the sheer intensity of emotional and physical reactions that is important but rather how they are perceived and interpreted. People who have a high sense of efficacy are likely to view their state of affective arousal as an energizing facilitator of performance, whereas those who are beset by self- doubts regard their arousal as a debilitator. Physiological indicators of efficacy play an especially influential role in health functioning and in athletic and other physical activities. (Bandura, 1994, np)	They're embarrassed because this kid's better than them. They really want to try, but they get shut down because of the peer pressure, or peer embarrassment, their own embarrassment.
Self-Efficacy	Construct - Verbal / social persuasions	Verbal persuasion refers to messages delivered by significant others which have the power to influence beliefs about capabilities, which in turn, have the potential to influence choices to engage in or avoid particular tasks. In the long run, they can impact decision-making regarding educational endeavors and subsequent career options. The power of the message, according to Bandura (1997, p. 105) "…is apt to be only as strong as the recipient's confidence in the person who issues them." Usher & Pajares (2006) referring to the work of Bandura (1997) and, Zeldin & Pajares, (2000, p.137) argue that, "…the message that a student is not capable of accomplishing particular academic tasks has the potential to influence the manner and degree to which that youngster will subsequently attempt such tasks, as well as the amount of effort and perseverance that the student will put	[Teacher reflecting on need to think before she says something to a student] And it's a constant, you know, think before you speak in my head, you know, before – like I gotta look at – take a step back, think before I put the words out there. I mean even in my notes on their work, you know, it's a think before I speak.

		forth in the face of obstacles."	
Self-Efficacy	Construct - Vicarious experiences	Vicarious experiences provide students with benchmarks for their own potential based on the performance of others who are deemed to have similar capabilities (Bandura, 1977, 1986; Rosenthal & Zimmerman, 1978; Schunk, 1987, 1989). "Students who observe a similar peer learn a task is apt to believe they can learn as well. Peer models may enhance self-efficacy better than teacher models among low-achieving students who doubt they are capable of attaining the teacher's level of competence" (Schunk, 1989, p. 183).	Some, oh yeah some do. It depends on the classmate. If it's Johnny Athlete doing it, then they may think they can't do it, but if it's someone they think they're on the same level with or maybe even below, when they see success, then yes.
Self-Efficacy	Oral - Construct - Vicarious experiences	In oral communications contexts - Vicarious experiences provide students with benchmarks for their own potential based on the performance of others who are deemed to have similar capabilities (Bandura, 1977, 1986; Rosenthal & Zimmerman, 1978; Schunk, 1987, 1989). "Students who observe a similar peer learn a task is apt to believe they can learn as well. Peer models may enhance self-efficacy better than teacher models among low-achieving students who doubt they are capable of attaining the teacher's level of competence" (Schunk, 1989, p. 183).	Some, oh yeah some do. It depends on the classmate. If it's Johnny Athlete doing it, then they may think they can't do it, but if it's someone they think they're on the same level with or maybe even below, when they see success, then yes.
Self-Efficacy	Oral - Construct - Mastery experiences	In oral communication contexts - Mastery experiences, "the interpreted results of one's purposive performance," are considered the most influential of the four sources which influence self-efficacy. (Bandura, 1997, Pajares, 2006, Pajares et al, 2007) -- We know that evaluation is particularly predictive when individuals have detailed information about a task -- writing a news story for a journalism class,	Some children are highly skilled in oral communications.

		solving math problems in a calculus class etc. These findings support Bandura's (1997) argument that self-report of perceived self-efficacy best predicts outcomes associated with specific domain level tasks.	
Self-Efficacy	Oral - Construct - Physiological and emotional states	In oral communications contexts Physiological arousal is also known as affective arousal (Smith, 2002) and emotional arousal (Hagen et al., 1998). Schunk (1989a, p. 174) notes that, "Students also derive efficacy information from physiological indexes (e.g., heart rate, sweating). Bodily symptoms signaling anxiety might be interpreted to mean one lacks necessary skills." However, physiological arousal does not always portend diminished self-efficacy. It is not the sheer intensity of emotional and physical reactions that is important but rather how they are perceived and interpreted. People who have a high sense of efficacy are likely to view their state of affective arousal as an energizing facilitator of performance, whereas those who are beset by self- doubts regard their arousal as a debilitator. Physiological indicators of efficacy play an especially influential role in health functioning and in athletic and other physical activities. (Bandura, 1994, p. np)	The most oral communications we have is during the Q&A in class, umm, I don't think many of them would be capable doing an oral report. I'm hoping that with the science fair that they are going to stand next to their table and present their material.
Self-Efficacy	Oral - Construct - Verbal / social persuasions	In oral communications contexts - Verbal persuasion refers to messages delivered by significant others which have the power to influence beliefs about capabilities, which in turn, have the potential to influence choices to engage in or avoid particular tasks. In the long run, they can impact decision-making regarding educational endeavors and subsequent career options. The power of the message, according to Bandura (1997, p. 105) "…is apt to be only as strong as the recipient's confidence in the person who issues them." Usher & Pajares (2006) referring to the work of Bandura (1997) and, Zeldin & Pajares, (2000, p.137) argue	[Teacher reflecting on need to think before she says something to a student] And it's a constant, you know, think before you speak in my head, you know, before – like I gotta look at – take a step back, think before I put the words out there. I mean even in my notes on their work, you know, it's a think before I speak.

		that, "…the message that a student is not capable of accomplishing particular academic tasks has the potential to influence the manner and degree to which that youngster will subsequently attempt such tasks, as well as the amount of effort and perseverance that the student will put forth in the face of obstacles."	
Self-Efficacy	Perceptions - General	General self-efficacy addresses individuals' perceptions regarding their ability to successfully tackle tasks across domains in varied situations and contexts. Chen et al., further note that Bandura (1997) recognized the importance of self-efficacy beyond "situational demands": Powerful mastery experiences that provide striking testimony to one's capacity to effect personal changes can also produce a transformational restructuring of efficacy beliefs that is manifested across diverse realms of functioning. Such personal triumphs serve as transforming experiences. What generalizes is the belief that one can mobilize whatever effort it takes to succeed in different undertakings. (p. 53)	(Me: Would you say that those students, if they answered these general self-efficacy questions, or the same questions geared specifically to the physics area.. how would those high-achieving students answer those questions…) They would answer high.
Self-Efficacy	Writing - Construct - Mastery experiences	In writing contexts - Mastery experiences, "the interpreted results of one's purposive performance," are considered the most influential of the four sources which influence self-efficacy. (Bandura, 1997, Pajares, 2006, Pajares et al, 2007) -- We know that evaluation is particularly predictive when individuals have detailed information about a task -- writing a news story for a journalism class, solving math problems in a calculus class etc. These findings support Bandura's (1997) argument that self-report of perceived self-efficacy best predicts outcomes associated with specific domain level tasks.	Some children are highly skilled in writing. They are very poetic, and they journal often, and other kids, other students are extremely deficient. I would think the majority are extremely deficient.

Self-Efficacy	Writing - Construct - Physiological and emotional states	In writing contexts - Physiological arousal is also known as affective arousal (Smith, 2002) and emotional arousal (Hagen et al., 1998). Schunk (1989a, p. 174) notes that, "Students also derive efficacy information from physiological indexes (e.g., heart rate, sweating). Bodily symptoms signaling anxiety might be interpreted to mean one lacks necessary skills." However, physiological arousal does not always portend diminished self-efficacy. It is not the sheer intensity of emotional and physical reactions that is important but rather how they are perceived and interpreted. People who have a high sense of efficacy are likely to view their state of affective arousal as an energizing facilitator of performance, whereas those who are beset by self- doubts regard their arousal as a debilitator. Physiological indicators of efficacy play an especially influential role in health functioning and in athletic and other physical activities. (Bandura, 1994, p. np)	They're embarrassed because this kid's better than them. They really want to try, but they get shut down because of the peer pressure, or peer embarrassment, their own embarrassment.
Self-Efficacy	Writing - Construct - Verbal / social persuasions	In writing contexts - Verbal persuasion refers to messages delivered by significant others which have the power to influence beliefs about capabilities, which in turn, have the potential to influence choices to engage in or avoid particular tasks. In the long run, they can impact decision-making regarding educational endeavors and subsequent career options. The power of the message, according to Bandura (1997, p. 105) "…is apt to be only as strong as the recipient's confidence in the person who issues them." Usher & Pajares (2006) referring to the work of Bandura (1997) and, Zeldin & Pajares, (2000, p.137) argue that, "…the message that a student is not capable of accomplishing particular academic tasks has the potential to influence the manner and degree to which that youngster will subsequently attempt such tasks, as well as the amount of effort and	[Teacher reflecting on need to think before she says something to a student] And it's a constant, you know, think before you speak in my head, you know, before – like I gotta look at – take a step back, think before I put the words out there. I mean even in my notes on their work, you know, it's a think before I speak.

		perseverance that the student will put forth in the face of obstacles.”	
Self-Efficacy	Writing - Construct - Vicarious experiences	In writing contexts - Vicarious experiences provide students with benchmarks for their own potential based on the performance of others who are deemed to have similar capabilities (Bandura, 1977, 1986; Rosenthal & Zimmerman, 1978; Schunk, 1987, 1989). “Students who observe a similar peer learn a task is apt to believe they can learn as well. Peer models may enhance self-efficacy better than teacher models among low-achieving students who doubt they are capable of attaining the teacher's level of competence” (Schunk, 1989, p. 183).	Some, oh yeah some do. It depends on the classmate. If it’s Johnny Athlete doing it, then they may think they can’t do it, but if it’s someone they think they’re on the same level with or maybe even below, when they see success, then yes.
Self-Regulation - Behavior	Behavior Plans	Formal plans which delineate behaviors and actions. "A behavioral intervention plan is a plan that is based on the results of a functional behavioral assessment (FBA) and, at a minimum, includes a description of the problem behavior, global and specific hypotheses as to why the problem behavior occurs and intervention strategies that include positive behavioral supports and services to address the behavior." http://www.p12.nysed.gov/specialed/publications/topicalbriefs/BIP.htm	We can’t tackle them and drag them into the classroom, as much as we would like to do that at this point, but we really have to come up with specific strategies that are consistent and lead them in that direction.
Self-Regulation - Behavior	Cueing - Verbal / Physical	Student behavior is managed and supported via verbal and physical cues, i.e. cues which keep students on task might include moving closer to the student, pointing to the student's work, a touch on the back; this type of feedback can be delivered by other students.	...with cues, we provide the ones who really don’t have a lot of self-regulation, with verbal cues or physical, you know, cues, or situations.

Self-Regulation - Behavior	Expectations	Staff student behavior expectations and dissemination of those expectations, i.e., school, classroom rules.	We go over the rules, of one person speaking at a time, and how they have to ask before they leave the room, ask before they do things, may I borrow, use the word please, thank you.
Self-Regulation - Behavior	External Consequences / Regulation	Student behavior controlled through external consequences or regulation, i.e. external guidance and support from staff, acting to receive rewards for positive behavior, etc.	You know some kids do get heated with the competition and it's my job to teach these kids how to regulate themselves and understand that it's just a game. You are possibly hurting your team by acting in a certain way; hurting yourself and not really, you know, you're shutting down a lot when you lose your temper.
Self-Regulation - Behavior	Influences	Issues which influence self-regulation of behavior, i.e. emotional issues which impact choices.	Well it's certainly a goal. It's a goal for every one of our students to self-regulate. Clearly, they self-regulate better when their emotions are not overwhelming them. So when they're in a good mood, or they're relaxed and nothing is upsetting them at the moment, they self-regulate. They go through their day and they go about their business.
Self-Regulation - Behavior	Peer Pressure	Student behavior is influenced by peer pressure -- positively or negatively.	I think they are tolerant of each other. We have, um, some students take the leadership role. I know one particular class I have, my second period class, is a little group of girls who like to sit in the corner and talk and it's not about class. And there are those who stand up and say "Enough already" be quiet, we're trying to learn here which is something I didn't really experience much here in the beginning (wow) and I'm starting to see it.
Self-Regulation - Behavior	Self-consequating	Students' address their own behavioral challenges by putting pressure on themselves to make positive choices, i.e. Positive self-talk, promising themselves an extrinsic reward, delay gratification. Zimmerman, Barry J. & Martinez-Pons, Manuel (1986). Development of a Structured Interview for Assessing Student Use of Self-Regulated Learning Strategies. American Educational Research Journal, 23, 614-628.	You know like, if a child, we have several of them right now, if a child just refuses to go into the classroom, starts wondering in the hallway, you know, what we have to do then, is we have to come up with a plan where the kid is encouraged to make decisions to do the right thing.

Self-Regulation - Behavior	Self-evaluating	Self-evaluating includes: checking quality or progress, task analysis (What does the teacher want me to do? What do I want out of it?), self-instructions; enactive feedback, attentiveness, Such self-evaluating may influence students to ask for help, take a next step to change a behavior or act more consistently in meeting a behavioral expectation. http://www.gifted.uconn.edu/siegle/SelfRegulation/printversion.pdf	They need to communicate their needs better or more clearly. They are very quick to act without expressing their needs, and if they were able to express their needs clearly, their needs would be met much quicker and….
Self-Regulation - Behavior	Self-Incentives	Bandura (1991) points to the research of Perri & Richards (1977) and Zimmerman, (1989, p. 258) arguing that "one of the factors which differentiates people who succeed in regulating their motivation and behavior to achieve what they seek from those who are unsuccessful in their self-regulatory efforts is the effective use of self-incentives."	
Self-Regulation - Oral	Goal Setting	See Self-Regulation - Direct Support & Self-Regulation-Writing	
Self-Regulation - Oral	Planning	Self-Regulation support in oral communications may include various planning documents including outlines, mind maps, visual flow diagrams etc.	
Self-Regulation - Oral	Self-monitoring	Self-Monitoring in the area of oral communications might include fluency of presentation, expression, speed etc all in response to practice sessions with peers, staff, or listening to a "draft" audio recording. Evidence of self-monitoring might include - revising a script, modifications in response to staff input, etc.	
Self-Regulation - Personal	Environmental structuring	Students engage in environmental structuring -- setting task conditions - to help self-regulate their own behavior and enhance potential to achieve learning goals when they -- avoid distractions, organize their materials etc.	

Self-Regulation - Personal	Goal Setting & Planning	Personal Self-Regulation in the area of goal setting and planning includes setting short and long term goals, using tools - assignment notebooks, journaling, personal learning portfolios -- to manage and monitoring efforts to accomplish goal related tasks. In a school setting, planning and monitoring are associated with academic tasks.	Having them journal. Breaking them down. I have, at the beginning of every year, I have each kid write down what their goals are for the year, and then I have them look at each goal and think of five things that they have to do in order to accomplish each goal.
Self-Regulation - Personal	Organizing and transforming information	Organizing, managing, and work with, and transforming information to accomplish goals is a requisite self-regulation skill for learning and the fulfilling workplace tasks.	A lot of them come with very poor organizational skills that also affect their ability to do it.
Self-Regulation - Personal	Record Keeping & Monitoring	Record keeping in the form of assignment books, calendars, journals, portfolios etc. is forms of personal records which can be used to monitor short and long-term tasks.	Well one of the things that we do, we all do, is each student has to have an assignment book, and they have to write down their assignments each day, and know what they are, and we, during our academic period with them, we review their books to make sure they're doing it, to make sure they're aware of what they need to do.
Self-Regulation - Personal	Rehearsing and memorizing	Rehearsing, memorizing and "encoding" are personal self-regulation skills used to master content and skills associated with academic tasks.	
Self-Regulation - Personal	Seeking information	Seeking information to support personal learning goals and behavioral goals. Seeking content in multiple formats from multiple sources, reading textbooks, reviewing notes, attending to teacher evaluations (review of written work), etc. Reaching out to teachers and clinicians to ask for support in dealing with emotional, learning, behavioral challenges.	I think the, the clinicians really have taught the children how to advocate for themselves. If they feel that they need to see their clinician, they usually can ask, if they need help or they don't understand something. It's constantly repeated and they have to speak up. You know, we can't read their minds. And I think a lot of children are very outspoken about their needs.
Self-Regulation - Personal	Time Management	"...the key factor in time management actually is prioritizing activities each day. The development of time management skills shows a strong correlation with higher secondary (Fulgini & Stevenson, 1995) and college academic achievement (Zimmerman, Greenberg, & Weinstein, 1994), increased self-esteem (Ferrari, 1991, 1994), lower	

		levels of learned helplessness (Kleijn, Van der Ploeg, & Topman, 1994), increased sense of competence (Higbee & Dwinell, 1992), and an internal locus of control (Ferrari & Emmons, 1994). ...extent to which adolescents desire more control over their lives (Lee, 1979) can influence the way they view and manage their time. Dembo,Myron H. ; Martin J. Eaton. (2000). Self-Regulation of Academic Learning in Middle-Level Schools. The Elementary School Journal, Vol. 100, No. 5, Special Issue: Non-Subject-Matter Outcomes of Schooling [II]: 473-490.	
Self-Regulation - Personal	Tool Use	Using tools to support and scaffold personal self-regulation, i.e. word-processing software, digital mind mapping and outlining tools, etc.	We encourage them to go on and use Microsoft Word.
Self-Regulation - Support	Coaching	Coaching includes one-to-one support around a particular homework assignment, music lessons, techniques for playing soccer in gym class etc.	I don't think I'd add anything. I just think, you know, baby steps. And again, same thing. I mean if they give me a sentence using a vocabulary word and you know if it's three words long, I will then help them to elaborate on that. Okay, we got a start. I mean it's playing cheerleader, and that's what we do.
Self-Regulation - Support	Demonstrating - Modeling	Use of demonstration and modeling to support student attainment of self-regulated behavior in varied settings (classroom) and across the curriculum.	You need to model it. You would – clear expectations. Go over what they're going to be graded on, so a rule book of some sort.
Self-Regulation - Support	Emotional	Staff support student in dealing with emotional issues which negatively impact behavior, socialization, learning etc. Examples of pro-active self-regulation of emotions suggested by Vohns & Baumeister (2010, p. 25) include moving to a different situation that is less likely to give rise to the unwanted emotion; taking actions that reduce the odds of ending up in a situation with undesirable emotional outcomes. Vohs, K. D., & Baumeister, R. F. (Eds.). (2010). Handbook of Self-Regulation, Second Edition:	You know that, we also do that with kids who are in the classroom, who start feeling anxious and what do they do, are they just going to blurt things out and start disrupting the class, or can we teach them to ask for their permission or tell somebody they need to take a walk, or tell somebody they need to write in their book or do whatever.

		Research, Theory, and Applications. New York: Guilford Press.	
Self-Regulation - Support	Environmental structuring	Environmental structuring by teachers to support self-regulation for learning and behavior would include setting task conditions including, but not limited to: selecting or arranging the physical setting; isolating/eliminating or minimizing distractions; break up study periods and spread them over time; preview what is coming up to reduce student anxiety etc. http://www.gifted.uconn.edu/siegle/SelfRegulation/printversion.pdf	I also do, and I do this, I preview the next day. At the end of a lot of the classes, like I'll say, so okay, so tomorrow what we're going to do. So if they're out or if you know, just to give them you know an idea of what they're walking into. So, you know, tomorrow we're starting Catcher in the Rye. So this is what we're headed into and so I do a lot of that, and that's as far as school wise. General, you know, I don't know. I guess I don't know off the top of my head. Well, I make the atmosphere comfortable enough that they can express when they're confused or they need something repeated, or they don't understand. So they're not afraid of –
Self-Regulation - Support	Goal Setting & Planning	Students are supported in setting reasonable, attainable goals associated with classroom assignments or self-initiated projects. Staff might review requirements for a large project such as a research paper and help students to set intermediate goals to tackle the assignment. Staff note that they preview what is coming up in the curriculum as an example of the teacher's goal setting behavior. "... goals mobilize effort, increase persistence, lead to task-appropriate study strategies (Locke & Latham, 1990), and influence personal efficacy through the commitment and subsequent effort they generate (Bandura, 1986; Schunk, 1996)." Garavalia, Linda S. & Gredler, Margaret E. (2002). An Exploratory Study of Academic Goal Setting, Achievement Calibration and Self-Regulated Learning. Journal of Instructional Psychology, Vol. 29.	I also do, and I do this, I preview the next day. At the end of a lot of the classes, like I'll say, so okay, so tomorrow what we're going to do. So if they're out or if you know, just to give them you know an idea of what they're walking into. So, you know, tomorrow we're starting Catcher in the Rye. So this is what we're headed into and so I do a lot of that, and that's as far as school wise. General, you know, I don't know. I guess I don't know off the top of my head.

Self-Regulation - Support	Guided Practice	Guided practice is used to support students as they tackle particular tasks. Guided practice provides students the opportunity to work through an activity, tackle a problem, perfect a skill etc. alongside a staff member who monitors progress and redirects activity to support attainment of a desired outcome.	Collaboration skills, well I would say group is the biggest area for that. We do help kids help each other, and try to problem-solve in group; try to listen to another speaker and the listening and the talking skills are both important to develop, but trying to get our kids to listen to one speaker at a time and not have Collaboration skills, well I would say group is the biggest area for that.
Self-Regulation - Support	Performance Feedback	When students compare their work to their more capable peers rather than to their personal improvements (progress), the results may lead to a "lower sense of self-efficacy and dysfunctional attributions will not sustain self-regulation" as noted by Schunk and Zimmerman (1994, p. 89) who argue that a performance goal focus "may not highlight the importance of processes and strategies underlying task completion or result in a sense of self-efficacy for learning."	I think they look to me for: How many sentences do I need to write? If I say the word, you know, if I say write an essay, they say how many paragraphs does it have to be? Do you need an introduction? So they're still looking for – it's not automatic. It's more rote.
Self-Regulation - Support	Process Feedback	When students compare their work to their more capable peers rather than to their personal improvements (progress), the results may lead to a "lower sense of self-efficacy and dysfunctional attributions will not sustain self-regulation" as noted by Schunk and Zimmerman (1994, p. 89) who argue that a performance goal focus "may not highlight the importance of processes and strategies underlying task completion or result in a sense of self-efficacy for learning."	They don't tend to know what subjects and verbs are. When they write a sentence, they write their thoughts, which is good because as the process, it's the beginning of the process, but there is an enormous amount of fine-tuning that has to go on, and this is an area of concern, because they need to pass a regents exam in English by the time they finish 11th grade.
Self-Regulation - Support	Progress Feedback	When students compare their work to their more capable peers rather than to their personal improvements (progress), the results may lead to a "lower sense of self-efficacy and dysfunctional attributions will not sustain self-regulation" as noted by Schunk and Zimmerman (1994, p. 89) who argue that a performance goal focus "may not highlight the importance of processes and strategies underlying task completion or result in a sense of self-efficacy for learning."	I don't think I'd add anything. I just think, you know, baby steps. And again, same thing. I mean if they give me a sentence using a vocabulary word and you know if it's three words long, I will then help them to elaborate on that. Okay, we got a start. I mean it's playing cheerleader, and that's what we do.

Self-Regulation - Support	Setting & Communicating Expectations	Staff clearly communicates what is expected of students. For students with disabilities, these expectations are differentiated to align to IEP - Individualized Education Plans -- which take disabilities into consideration.	And another role of mine, I think is as an advocate for the kids to the teachers in terms of explaining what expectations are realistic and why there might be issues that the student has that prevent him from being able to meet their expectations.
Self-Regulation - Support	Social	Support from teachers, clinicians, other adults, or trusted peers to address social situations which students find challenging to navigate on their own.	Sometimes, a student will ask, and we will support them trying to have a counseling session with another student that they're either concerned about or they've had a conflict with, and that's another form of collaboration I guess that is more spontaneous.
Self-Regulation - Support	Task Chunking	Task chunking is used to make a seemingly overwhelming assignment, for example, accessible by showing students how it can be tackled in segments. As students become more proficient at "chunking" assignments on their own, they will not feel overwhelmed, but rather empowered to tackle a complex task and completed it.	Well they have to set a goal, and then you have to break it down into small pieces, so it's – you can check off the list as they accomplish one thing and the next.
Self-Regulation - Writing	Goal Setting	Goal setting can be particularly challenging for students who are dealing with emotional, behavioral, social, and cognitive issues (Bandura and Cervone, 1983; Locke et al., 1981). Goals which are specific, proximal, and attainable have been shown to enhance achievement outcomes (Schunk, 1985, 1989a). Cleary (1991, p. 502) notes that students whose teachers helped them to break complex writing tasks into manageable parts viewed complex assignments as challenging but not overwhelming. Bruning & Horn (2000, p. 33) echo this suggestion, "Teachers can help break writing tasks into manageable parts, which not only reduces the processing demands of a complex task, but also allows students to monitor their progress and experience success during the writing process."	I think they look to me for: How many sentences do I need to write? If I say the word, you know, if I say write an essay, they say how many paragraphs does it have to be? Do you need an introduction? So they're still looking for – it's not automatic. It's more rote.
Self-Regulation - Writing	Planning	Self-Regulation support in written communications may include various planning documents including outlines, mind maps, visual flow	Well, we do encourage teachers to I guess chunk things down, so that they can, you know, if some of them can write two or three words, others can write a page

		diagrams etc.	without batting an eye, but a lot, you know, it really is an individual thing.
Self-Regulation - Writing	Self-monitoring	Self-Monitoring in the area of written communications might include drafting, editing, peer editing, seeking and accepting teacher input. Evidence of self-monitoring might include - revising, modifications in response to peer, staff input etc.	and we also keep a binder of their [writing binder]– of the very first topic they did, all the way to the 20th topic that they did, and they usually grade themselves out of ten, so that obviously, as the year goes on, they see that their grade improves. -- They self-evaluate themselves.
Social Networking - Value	Negative Perception	Articulation of negative feelings associated with social networking platforms such as Facebook, Twitter etc. (Tool specific as someone may appreciate LinkedIn but have an aversion to Facebook.)	I mean with the students, everyone's on it. I mean all the kids are definitely on it; so the bullying is huge. I mean we've had situations here you know where fights and things have been started, you know, on Facebook, so that's a challenge I think.
Social Networking - Value	Neutral Perception	Articulation of neutral feelings associated with social networking.	I'm registered for LinkedIn, but I haven't used it, but I might use that more, although I guess I'm not needing, I don't find the need to network right now, and some of it seems very time consuming to be involved in all of that, but you know, with LinkedIn, I haven't done it enough to see any negativity about it.
Social Networking - Value	Positive Perception	Articulation of positive feelings associated with social networking.	Well it's very positive. And I think that by social networking, you're talking about the different ways…Yeah, I do that. I have LinkedIn and Facebook. And obviously, e-mail and all the websites. But I also like situations where you can go like to actual meeting with people and see people. I like that.
Socializing	Challenges	Personal challenges associated with socializing.	I think a lot of our students are better orally than they are with writing, but they also have, for a lot of the same reasons, they have big social issues in communicating appropriately.
Socializing	Support	Provide direct instruction in options students can employ to meet social challenges. Modeling appropriate social behavior.	You know that, we also do that with kids who are in the classroom, who start feeling anxious and what do they do, are they just going to blurt things out and start disrupting the class, or can we teach them to ask for their permission or tell somebody they need to take a walk, or tell somebody they need to write in their book or do whatever.

Task Value / Motivation	Allow for collaboration	Paris & Paris (2001, p. 93) posit that cognitive engagement is likely to be realized when "tasks ….allow for collaboration..." Paris, S., & Paris, A. (2001). Classroom applications of research on self-regulated learning. Educational Psychologist, 36(2), 89-101.	
Task Value / Motivation	Background knowledge and skills	Students who have the background knowledge and skills to competently tackle a task are more likely to value the task.	I think if it's a topic that they can relate to, then they will spill. So if it's something abstract, something in literature that is a concept that they never heard of, obviously, they are going to look at you with a blank stare. My job, I think is to, and I'm sure this is another question down the line; my job is to make it relate, and make it make sense for them, so that they can, you know, make it make sense.
Task Value / Motivation	Connections to experts	Task value and motivation invoked when activities bring students into relationships with experts and expert mentors.	
Task Value / Motivation	High Expectations & Support	Paris & Paris (2001, p. 93) posit that cognitive engagement is likely to be realized when "tasks ...communicate high expectations and offer consistent support for students to meet those expectations." Paris, S., & Paris, A. (2001). Classroom applications of research on self-regulated learning. Educational Psychologist, 36(2), 89-101.	
Task Value / Motivation	Instruction Challenges	Instructional challenges staff face when students are not motivated to engage in learning activities, do not value learning tasks or education in general.	No, I don't think they would have studied ... when they go home there is just so much to distract them from their studies. I guarantee they are spending 4 or 5 hours on the internet every night for those kids who have computers and those who don't, I don't know what they're doing -- laughter.
Task Value / Motivation	Real world connections	Task value and motivation invoked by activities associated with valued, real world connections. Paris & Paris (2001, p. 93) posit that cognitive engagement is likely to be realized	The students I have, as far as writing skills, I would say the most writing they would do would be lyrics or, or umm, rap lyrics. You know that is not one of my expectations that they expect. Mine is

		when "tasks ... relate to life outside of school..." Paris, S., & Paris, A. (2001). Classroom applications of research on self-regulated learning. Educational Psychologist, 36(2), 89-101.	more so from performance. Although at some meetings we're trying to see how we can get um kids to use better vocabulary throughout the school. Id' be on board with that if we had words of week or something. But as far as the expectations for the music department, I'd say not so.
Task Value / Motivation	Rewards	Task value motivated by rewards.	I think that one of the things in my physics class that really go them excited is I promised them a trip to Physics day at Six Flags. So that got them motivated. So whenever there is a reward at the end it seems that participation seems to go up.
Task Value / Motivation	Sense of (taking) ownership	Paris & Paris (2001, p. 93) posit that cognitive engagement is likely to be realized when "tasks … permit a sense of ownership..." Paris, S., & Paris, A. (2001). Classroom applications of research on self-regulated learning. Educational Psychologist, 36(2), 89-101.	NO OWNERSHIP: I think they look to me for: How many sentences do I need to write? If I say the word, you know, if I say write an essay, they say how many paragraphs does it have to be? Do you need an introduction? So they're still looking for – it's not automatic. It's more rote. OWNERSHIP: So there are some kids who are really taking the initiative that they want to learn, they don't want people getting in their way of learning and they're taking their subject seriously which is a great thing to see. And I'm not battling the sleeping child in class as much as I used to also.
Task Value / Motivation	Student interests	Task value and motivation invoked by activities associated with personal interests.	(*Teacher shared during demographic data collection) I think there was an understanding, a better understanding of the kids and more of the – I guess, yeah I guess I was able to just take a step back from the textbooks and look at the kids as kids and react to them differently, as opposed to you know, sticking to the lessons and where's your homework and that kind of thing. So being a little more human, you know that kind of thing.
Task Value / Motivation	Verbal Praise	Task Value motivated by verbal praise.	Remember this, this lovely, lovely piece of work. It really is, and truly it is. [Holds up the last newsletter.]
ZZ-OTHER	NO CATEGORY IDENTIFIED		

Appendix P: Main & Sub Category Codes

MAIN & SUB-CATEGORIES	# PreWeJay Interviews # Text Segments 245		# PreWeJay Observations # Text Segments 120		# Dur WeJay Open-Ended Interviews # Text Segments 93		Assigned to Categories Total # Text Segments 458	
	# Coded	% Seg	# Coded	% Seg	# Coded	% Seg	# Coded	% Seg
COLLABORATION - OPPORTUNITIES								
Challenges	8		0		0		8	
Staff Initiated	13		2		0		15	
Student Initiated	2		0		4		6	
Total :	**23**	**9.39%**	**2**	**1.67%**	**4**	**4.30%**	**29**	**6.33%**
COLLABORATION - PURPOSE								
Decision Making	2		1		0		3	
Home-School Communication	1		1		0		2	
Learning	13		1		1		15	
Planning	2		11		0		13	
Problem Solving	1		0		0		1	
Projects / Producing	4		6		3		13	
Social	2		0		5		7	
Total:	**25**	**10.20%**	**20**	**16.67%**	**9**	**9.68%**	**54**	**11.79%**
COLLABORATION SUPPORT								
Debriefing Student Issues	2		2		0		4	
Identify Student Needs	0		0		2		2	
Modeling	3		0		0		3	
Total:	**5**	**2.04%**	**2**	**1.67%**	**2**	**2.15%**	**9**	**1.97%**
INSTRUCTION								
Approaches	5		1		8		14	
Communications Overall	3		0		0		3	
Learning Environment	0		0		0		0	
Oral Communications	9		0		0		9	
Other	4		12		1		17	
Writing	10		4		0		14	
Total:	**31**	**12.65%**	**17**	**14.17%**	**9**	**9.68%**	**57**	**12.45%**
INSTRUCTION - CHALLENGES								
Assessments	0		0		0		0	
Mandates	3		2		0		5	
Resources	5		0		2		7	
Safety	3		0		0		3	
Student Cognitive	4		0		0		4	
Student Emotional / Behavioral	6		5		4		15	
Student Social	0		0		0		0	
Time	2		0		20		22	
Total:	**23**	**9.39%**	**7**	**5.83%**	**26**	**27.96%**	**56**	**12.23%**
SELF-EFFICACY - GENERAL								
Perceptions	5		0		0		5	
Mastery experiences	16		2		1		19	
Physiological and emotional states	8		1		0		9	

Verbal / social persuasions	5		8		1		14	
Vicarious experiences	7		1		0		8	
Total:	**41**	**16.73%**	**12**	**10%**	**2**	**2.15%**	**55**	**12.01%**
SELF-EFFICACY - ORAL COMMUNICATIONS								
Mastery experiences	13		0		4		17	
Physiological and emotional states	8		0		2		10	
Verbal / social persuasions	5		1		1		7	
Vicarious experiences	0		0		0		0	
Total:	**26**	**10.61%**	**1**	**0.83%**	**7**	**7.53%**	**34**	**7.42%**
SELF-EFFICACY WRITING								
Mastery experiences	9		0		3		12	
Physiological and emotional states	3		2		0		5	
Verbal / social persuasions	2		1		1		4	
Vicarious experiences	1		1		0		2	
Total:	**15**	**6.12%**	**4**	**3.33%**	**4**	**4.30%**	**23**	**5.02%**
SELF-REGULATION – BEHAVIOR								
Behavior Plans	1		0		0		1	
Cueing - Verbal / Physical	5		1		0		6	
Expectations	4		1		0		5	
External Consequences / Regulation	4		0		0		4	
Influences	1		0		0		1	
Peer Pressure	3		0		0		3	
Self-consequating	5		0		0		5	
Self-evaluating	5		1		0		5	
Self-Incentives	1		0		0		1	
Total:	**29**	**11.84%**	**3**	**2.50%**	**0**	**0.00%**	**32**	**6.99%**
SELF-REGULATION – ORAL COMMUNICATIONS								
Goal Setting	0		0		0		0	
Planning	0		0		2		2	
Self-monitoring	0		0		0		0	
Total:	**0**	**0.00%**	**0**	**0.00%**	**2**	**2.15%**	**2**	**0.44%**
SELF-REGULATION – PERSONAL								
Environmental structuring	1		0		3		4	
Goal Setting & Planning	1		0		12		13	
Organizing and transforming information	1		5		3		9	
Record Keeping & Monitoring	1		0		1		2	
Rehearsing and memorizing	0		5		1		6	
Seeking information	1		15		6		22	
Time Management	0		1		3		4	
Tool Use	3		1		6		10	
Total:	**8**	**3.27%**	**27**	**22.50%**	**35**	**37.63%**	**70**	**15.28%**
SELF-REGULATION – SUPPORT								
Coaching	10		10		10		30	
Demonstrating - Modeling	6		33		0		39	
Emotional	5		3		2		10	
Environmental structuring	18		2		16		36	
Goal Setting & Planning	6		16		2		24	

Guided Practice	6		37		2		45	
Performance Feedback	3		3		0		6	
Process Feedback	0		5		0		5	
Progress Feedback	10		2		0		12	
Setting & Communicating Expectations	6		28		5		39	
Social	2		0		0		2	
Task Chunking	9		12		0		21	
Total:	**81**	**33.06%**	**151**	**125.83%**	**37**	**39.78%**	**269**	**58.73%**
SELF-REGULATION – WRITING								
Goal Setting	5		5		2		12	
Planning	10		18		2		30	
Self-monitoring	5		4		0		9	
Total:	**20**	**8.16%**	**27**	**22.50%**	**4**	**4.30%**	**51**	**11.14%**
SOCIAL NETWORKING - VALUE								
Negative Perception	20		0		0		20	
Neutral Perception	2		0		2		4	
Positive Perception	10		0		3		13	
Total:	**32**	**13.06%**	**0**	**0.00%**	**5**	**5.38%**	**37**	**8.08%**
SOCIALIZING								
Challenges	3		0		1		4	
Support	5		0		0		5	
Total:	**8**	**3.27%**	**0**	**0.00%**	**1**	**1.08%**	**9**	**1.97%**
TASK VALUE – MOTIVATION								
Allow for collaboration	0		0		4		4	
Background knowledge and skills	5		0		1		6	
Connections to experts	0		0		3		3	
High Expectations & Support	0		4		2		6	
Instruction Challenges	7		5		1		13	
Real world connections	8		5		9		22	
Rewards	7		2		0		9	
Sense of (taking) ownership	3		0		7		10	
Student interests	3		9		27		39	
Verbal Praise	0		6		10		16	
Total:	**33**	**13.47%**	**31**	**25.83%**	**64**	**68.82%**	**128**	**27.95%**

Appendix Q: Staff End of During WeJay Open-Ended Interview Statement

Today I will ask you to participate in an open-ended interview on the WeJay Project here at the high school. We'll start by looking at the Activity Theory Diagram I shared back in October when I introduced the project and consider our journey through the parts of the diagram. [Diagram is shared - exhibit in dissertation -- walked through the eight components of the diagram.] I shared some inspirational radio broadcasts and posted them on the Hawk's Nest Google Site. Nelson Lauver, founder of the American Storyteller, Skyped in to the media center and shared his experiences growing up with dyslexia, overcoming his challenge, and becoming the host of a highly successful radio show. Once you decided to become a staff participant, I administered a structured interview which addressed self-regulated behavior, learning and self-efficacy in general and related to oral and written communications. You responded with your perceptions of the students here at the high school. You took on a mentorship role and supported students in creating their own "radio shows" and several of the shows are posted on the Hawk's Nest Google Site. I'd like you to talk about your experience with the project, any reflections you'd like to make on how it went; positives, negatives, challenges, opportunities. What you think it meant to the kids. Feel free to talk about anything associated with the project, (activity theory diagram is displayed on the table) anything you'd like to share.

Appendix R: Inter-Coder Reliability Results

Final inter-coder results are shared in below.

Inter-Coder Reliability Analysis - Pre-WeJay Semi-Structured Interview							
		MAIN CATEGORY			SUB CATEGORY		
QUESTIONS	#Parsed Segments	#Match	#No-M	%Match	#Match	#No-M	%Match
Perceptions of student knowledge and skills – writing.	23	21	2	91.30%	20	3	86.96%
Perceptions of student knowledge and skills – oral communications.	17	14	3	82.35%	13	4	76.57%
Role of staff in supporting written communications skills.	19	19	0	100%	14	5	73.68%
Role of staff in supporting oral communications skills.	18	16	2	88.89%	14	4	77.78%
Role of staff in supporting collaboration skills.	27	25	2	92.59%	24	3	88.89%
Methods employed to support collaboration.	10	8	2	80%	8	2	80%
Methods employed to support and build student general self-efficacy.	23	21	2	91.30%	18	5	78.26%
Methods employed to build student writing self-efficacy	20	20	0	100%	18	2	90%
Methods employed to build student speaking self-efficacy.	8	6	2	75%	5	3	62.50%
Methods employed to support and build general self-regulation.	24	20	4	83.33%	17	7	70.83%
Methods employed to support and build writing self-regulation.	18	16	2	88.89%	15	3	83.33%
Attitude toward and experience with social networking.	23	22	1	95.65%	19	4	82.61%
Perceived challenges with social networking	14	13	1	92.86%	13	1	92.86%
TOTALS	**244**	**221**	**23**	**90.57%**	**198**	**46**	**81.15%**
Match Indicates the one or more of one to three codes assigned to a segment by the first and second coder resulted in a match.							

Inter-Coder Reliability Analysis – Pre-WeJay Observations

		MAIN CATEGORY			SUB CATEGORY		
PARTICIPANT #	#Parsed Segments	#Match	#No-M	%Match	#Match	#No-M	%Match
1623	21	21	0	100%	21	0	100%
2535	32	32	0	100%	31	1	96.88%
2903	24	24	0	100%	24	0	100%
3615	15	15	0	100%	15	0	100%
7529	16	16	0	100%	16	0	100%
8715	12	12	0	100%	12	0	100%
TOTALS	**120**	**120**	**0**	**100%**	**119**	**1**	**99.17%**

Match Indicates the one or more of one to three codes assigned to a segment by the first and second coder resulted in a match.

Inter-Coder Reliability Analysis - During-WeJay Open-Ended Interview

		MAIN CATEGORY			SUB CATEGORY		
PARTICIPANT #	#Parsed Segments	#Match	#No-M	%Match	#Match	#No-M	%Match
1623	13	13	0	100%	13	0	100%
1823	13	9	4	69.23%	8	5	61.54%
2535	13	12	1	92.31%	12	1	92.31%
2903	6	6	0	100%	6	0	100%
3615	6	5	1	83.33%	5	1	83.33%
4978	18	16	2	88.89%	16	2	88.89%
5087	5	5	0	100%	5	0	100%
7529	6	5	1	83.33%	3	3	50%
8715	13	13	0	100%	13	0	100%
TOTALS	**93**	**84**	**9**	**90.32%**	**81**	**12**	**87.10%**

Match Indicates the one or more of one to three codes assigned to a segment by the first and second coder resulted in a match.

Appendix S: Second Coder Comments

- I felt at a bit of a disadvantage when coding [observations] since I do not have classroom teaching experience so I may not have been understanding and/or interpreting the codes as effectively as they were designed and intended to be applied.

- In the During WeJay coding I was using code 107 to pick up on all the good feedback that the WeJay trial was generating. This may not be appropriate for your purposes.

- I had difficulty trying to find a category to capture the difficulty that 'staff' had with the WeJay concept ... (e.g., 1823(15), etc.)

- The comment regarding WeJay being good for 'kids who want to be seen and heard' is interesting in terms of the title of your research (Can you hear us). The notion that WeJay is good for 'extroverted' kids ... maybe we are not just simply introverted or extroverted but we all have elements of many things ... reference was made to a couple of kids coming 'out of their shell' for example

- I also found myself wanting to code for the 'humor' and fun and enjoyment being experienced but I was not sure which code I could use for that.

- This discussion of the 'club' notion was interesting ... was WeJay perceived as 'disruptive' and individuals wanted to relegate it to something separate from the notion of school, learning, classroom?

- I found myself using the 95 code a lot which may have been appropriate or inappropriate, but I was trying to get at the notion that the value and benefit of this approach was being recognized. And could it be understood as complementing or augmenting existing approaches or indeed as offering another approached ... in keeping with one comment that referred to it as 'innovative'.

- There was also the suggestion or interpretation that this work the kids were doing around WeJay was not 'academic' perhaps because it focused on sport or entertainment, yet so much learning, etc, etc, etc was happening in the process

- The very powerful comment that instructors were 'learning' a lot

- The very powerful realization by these kids around the connection between career choices and coursework

Appendix T: Student Survey - Cronbach's Alpha

All Participants, All Phases

	Pre-WeJay		During WeJay		Post WeJay	
	Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items
	n=27		n=19		n=16	
Section 1: General Self-Efficacy = # Questions - 8	.821	.822	.894	.898	.889	.891
Section 2: Writing Self-Efficacy - # Questions-18	.940	.940	.915	.917	.955	.956
Section 3D: During Writing - Self-Regulation - #Questions - 16	.807	.822	.676	.688	.736	.752
Section 3P: Planning Writing - Self-Regulation – #Questions - 10	.811	.803	.864	.872	.898	.904
Section 3R: Reflecting on Writing - Self-Regulation – #Questions -11	.883	.885	.887	.890	.813	.809
Section 4: Oral Communications - Self-Efficacy– #Questions -23	.895	.891	.915	.914	.895	.898

Students Who Completed Survey at Each Phase of the Study – n=15

	Pre-WeJay		During WeJay		Post WeJay	
n=15	Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items
Section 1: General Self-Efficacy = # Questions - 8	.791	.788	.849	.859	.852	.853
Section 2: Writing Self-Efficacy - # Questions-18	.944	.945	.908	.911	.949	.951
Section 3D: During Writing - Self-Regulation - #Questions - 16	.716	.777	.479	.516	.619	.628
Section 3P: Planning Writing - Self-Regulation – #Questions - 10	.845	.845	.817	.826	.864	.873
Section 3R: Reflecting on Writing - Self-Regulation – #Questions -11	.935	.939	.872	.875	.772	.760
Section 4: Oral Communications - Self-Efficacy– #Questions -23	.913	.914	.891	.894	.865	.868

Appendix U: Student Survey - Cronbach's Alpha, Mean, Standard Deviation

Students Who Completed Survey by Section, Phase, and Question

Section 1: General Self-Efficacy – n=15						
n=15	Pre-WeJay Cronbach's .791		During WeJay Cronbach's .849		Post-WeJay Cronbach's .852	
1-Strongly Disagree, 2-Disagree, 3-Undecided. 4-Agree, 5-Strongly Agree	Mean	Std. Dev	Mean	Std. Dev	Mean	Std. Dev
1. I will be able to achieve most of the goals that I have set for myself.	3.67	.724	4.00	.655	3.80	.676
2. When facing difficult tasks, I am certain that I will accomplish them.	3.27	.704	3.60	.828	3.87	.640
3. In general, I think that I can obtain outcomes that are important to me	4.13	.640	3.93	.799	4.07	.704
4. I believe I can succeed at most any endeavor to which I set my mind.	3.80	.775	3.93	1.033	3.80	.775
5. I will be able to successfully overcome many challenges.	3.47	.834	3.87	.743	3.87	.640
6. I am confident that I can perform effectively on many different tasks.	3.80	.775	3.87	.743	3.60	.910
7. Compared to other people, I can do most tasks very well.	3.47	.915	3.53	.990	3.80	.775
8. Even when things are tough, I can perform quite well.	3.53	.640	3.93	.799	3.73	.799

Section 2: Writing Self-Efficacy – n=15						
n=15	Pre-WeJay Cronbach's .944		During WeJay Cronbach's .908		Post-WeJay Cronbach's .949	
1- I do not do it well at all, 2- I do not do it well, 3- I do it well, 4- I do it very well.	Mean	Std. Dev	Mean	Std. Dev	Mean	Std. Dev
1. I can write an interesting and appropriate response to a given topic.	3.29	.611	3.13	.640	3.13	.516
2. I can easily cover all the information that should be dealt with in a given topic	2.86	.864	2.93	.594	3.20	.775
3. I can use an appropriate writing style for the task.	3.43	.646	3.07	.799	3.13	.743
4. I can generate ideas to write about easily.	3.14	.949	2.93	.704	3.13	.834
5. I can think of ideas rapidly when given a topic to write about.	2.79	.893	2.87	.743	3.00	.756
6. I can write on an assigned topic without difficulty.	2.64	.842	2.33	.816	2.87	.743
7. I can easily find examples to support my ideas.	2.71	.825	2.73	.884	3.07	.884
8. I can write grammatically correct sentences	3.07	.917	2.93	.704	3.07	.704

in my compositions.						
9. I can edit my compositions for mistakes such as punctuation, capitalization, paragraphing.	3.14	.663	3.00	.655	3.00	1.000
10. I can link ideas together easily.	2.93	.616	2.87	.640	2.93	.884
11. I can use transition words correctly to make my composition a better one.	2.93	.829	2.87	.640	2.87	.834
12. I can use a wide range of vocabulary in my compositions.	2.79	.802	3.07	.799	2.87	.990
13. I can use synonyms in a composition rather than repeating the same words over and over again.	2.64	1.00	3.13	.640	2.93	.884
14. I can write a brief and informative overview of a given topic.	3.14	.864	2.93	.594	3.07	.594
15. I can manage my time efficiently to meet a deadline on a piece of writing.	2.71	.825	2.73	.594	2.80	.775
16. I can rewrite my wordy or confusing sentences to make them clearer.	3.07	.730	2.87	.640	3.13	.516
17. I can choose and defend a point of view.	3.00	.679	2.93	.704	3.20	.775
18. I can fulfill a writing task without difficulty within a given time limit.	2.71	.994	2.60	.737	3.00	.756

Section 3P: Planning Writing - Self-Regulation – n=15						
n=15	Pre-WeJay Cronbach's .845		During WeJay Cronbach's .817		Post-WeJay Cronbach's .864	
1-Never, 2-Sometimes, 3-Often, 4-Always	Mean	Std. Dev	Mean	Std. Dev	Mean	Std. Dev
1. I create goals for every writing task I need to accomplish.	2.33	.724	2.20	.775	2.40	.632
2. I plan the contents of the things that I will write.	2.53	.915	2.33	.816	2.33	.976
3. I take note of my purpose for a specific writing task.	2.20	.676	2.33	.617	2.33	.900
4. I think of my target audience and reason for writing a certain piece.	2.53	.516	2.27	.704	2.33	.976
5. I set a specific time in which I would write.	2.07	.799	2.07	.704	2.47	1.18
6. I visualize my written output first before I begin writing.	2.40	.737	2.53	.990	2.33	1.11
7. I have a certain length in mind for the paper that I will work on.	2.47	.743	2.40	1.05	2.27	.961
8. I brainstorm for ideas before I write.	2.87	.834	2.67	.900	2.80	1.01
9. I use graphic organizers to manage my ideas.	1.87	.834	1.73	.799	2.07	1.16
10. I create an outline before I write.	2.27	.884	2.07	.961	2.40	.986

Section 3D: During Writing - Self-Regulation – n=15						
n=15	Pre-WeJay Cronbach's .716		During WeJay Cronbach's .479		Post-WeJay Cronbach's .619	
1-Never, 2-Sometimes, 3-Often, 4-Always	Mean	Std. Dev	Mean	Std. Dev	Mean	Std. Dev
11. I create a draft before writing the final paper.	2.20	.941	2.33	1.04	2.40	.910
12. I use certain writing strategies such as annotating, outlining, etc. whenever doing a writing task.	2.13	.915	2.33	1.04	2.27	.458
13. I proofread my work.	3.13	.990	3.00	.926	2.80	1.01
14. I aim to create a paper with no grammatical errors.	3.07	1.03	3.07	1.10	3.33	.900
15. I ask my peers to edit my writing.	1.93	.799	1.93	.884	1.87	1.06
16. I ask a teacher to evaluate my writing and give suggestions for revising.	3.00	.926	2.87	.915	2.53	.834
17. I use word processing software to check for errors in my writing.	2.87	.990	2.80	.862	2.73	1.22
18. I reread my work several times to look for errors in my writing.	2.67	.900	2.80	1.08	2.67	1.17
19. I use the writing approach of planning, organizing, writing, editing and revising…	2.60	.828	2.20	.862	2.60	.737
20. I take into consideration the comments of other people about my writing.	2.93	.594	3.27	.799	3.07	.961
21. I like talking with my friends while doing a writing task. I write so that I can gather more ideas from them.	2.27	1.33	2.47	1.18	2.40	1.18
22. I prefer having people or friends around when I write so that I can gather more ideas from them.	2.20	1.26	2.73	.961	2.13	1.187
23. I don't let others disturb me when I am writing.	2.67	1.04	.910	15	2.53	1.18
24. I accomplish all my writing tasks at my own pace.	3.27	.884	3.13	.834	3.07	.961
25. I usually do my writing tasks in a quiet place where there isn't much noise.	2.73	.884	2.53	.915	2.47	1.12
26. I like to multi-task (work on more than one thing) whenever I write.	2.40	1.12	2.27	.961	2.07	1.10
27. I don't like writing in a crowded place.	2.67	1.11	2.87	.990	2.60	1.29

Section 3R: Reflecting on Writing - Self-Regulation – n=15						
n=15	Pre-WeJay Cronbach's .935		During WeJay Cronbach's .872		Post-WeJay Cronbach's .772	
1-Never, 2-Sometimes, 3-Often, 4-Always	Mean	Std. Dev	Mean	Std. Dev	Mean	Std. Dev
28. When I receive a low mark on a certain writing activity, I will plan my next activity in a more detailed manner.	2.73	.961	2.47	.834	2.20	.676
29. I read more so that I have a wide range of knowledge for the next writing task.	2.33	.900	2.13	.834	2.40	.737
30. I take note of the comments of the teacher and make sure that I apply them in the next writing activity.	2.87	1.12	2.93	.961	2.93	.961
31. I read my work carefully and look for where I may have made an error.	2.87	.915	2.87	.915	2.93	.961
32. I ask my teacher for possible improvements I can make in my written outputs.	3.07	.704	2.73	.961	2.60	.986
33. I keep a writing portfolio so that I can see the progress and development of my writing.	1.53	1.06	1.80	1.082	1.93	1.163
34. I eliminate distractions that might have interfered with my writing.	2.67	1.04	2.20	.862	2.60	.737
35. I'll extensively familiarize myself with the next topic I will write about.	2.67	.976	2.67	.900	2.20	1.014
36. I'll use a thesaurus to enrich my writing and vocabulary in the next writing activity.	1.73	1.10	1.80	1.082	2.13	1.246
37. I'll read aloud what I have written so that I can check what sounds good and what doesn't.	2.60	1.12	2.33	.900	1.93	.961
38. I will look for ways to ensure that the audience of my next writing task will be interested in my composition.	2.53	1.06	2.33	.816	2.67	1.04

Section 4: Oral Communications - Self-Efficacy – n=15						
n=15	Pre-WeJay Cronbach's .913		During WeJay Cronbach's .891		Post-WeJay Cronbach's .865	
1-Always True, 2-Mostly True, 3-Mostly False, 4-Always False	Mean	Std. Dev	Mean	Std. Dev	Mean	Std. Dev
1. I don't mind asking the teacher a question in class.	1.38	.506	1.43	.514	1.47	.516
2. Sometimes I can't figure out what to say.	2.85	.801	2.71	.726	2.80	1.014
3. It is harder for me to give a report in class than it is for most of the other kids.	2.08	.862	2.43	1.089	2.07	1.100
4. I like the way I talk.	2.00	.913	2.14	.770	1.93	.799
5. People sometimes finish my words for me.	2.62	.768	2.36	.497	2.53	.915
6. I find it easy to talk to most everyone.	2.08	.641	2.36	.842	2.47	.990
7. It is hard for me to talk to people.	1.92	.760	2.29	.726	2.20	.862
8. I don't worry about the way I talk.	2.38	.961	2.57	.852	2.53	.990

9. I don't find it easy to talk in front of other people.	1.85	.987	2.14	.663	2.13	.915
10. It is easy for me to figure out what to say.	2.38	.768	2.36	.745	2.33	.724
11. I'm afraid that kids will make fun of me when I talk.	1.85	.899	1.79	.699	1.87	.640
12. Talking is easy for me.	2.00	1.00	2.00	.784	2.20	1.082
13. Telling someone my name is hard for me.	1.15	.376	1.21	.579	1.47	.915
14. I talk well with most everyone.	1.85	.689	2.14	.770	2.27	.799
15. I would rather talk than write.	2.00	1.22	1.71	.726	2.07	1.100
16. I like to talk.	1.62	.650	1.86	.770	1.60	.632
17. I am not a good talker.	1.77	.832	1.93	.917	2.13	.990
18. I wish I could talk like other students.	1.85	.987	1.86	.770	2.20	1.146
19. I let others talk for me.	1.54	.776	1.71	.825	1.60	.737
20. Reading aloud in class is easy for me.	2.31	.751	2.29	.914	2.60	1.056
21. I am good at sharing my ideas during class.	1.69	.751	1.93	.730	2.07	.961
22. I like to answer questions that people ask me.	1.85	.689	2.21	1.051	1.87	.834
23. I worry about asking questions during class.	1.85	.689	1.64	.633	2.07	.884

Appendix V: Student Survey - Paired Sample t-Tests

Section 1: General Self-Efficacy

Section 1: General Self-Efficacy – Paired Sample t-Test - T1>T2

T1>T3		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	01	-.333	.900	.232	-.832	.165	-1.435	14	.173
Pair 2	02	-.333	.900	.232	-.832	.165	-1.435	14	.173
Pair 3	03	.200	.941	.243	-.321	.721	.823	14	.424
Pair 4	04	-.133	1.246	.322	-.823	.557	-.414	14	.685
Pair 5	05	-.400	1.056	.273	-.985	.185	-1.468	14	.164
Pair 6	06	-.067	1.163	.300	-.711	.577	-.222	14	.827
Pair 7	07	-.067	1.100	.284	-.676	.542	-.235	14	.818
Pair 8	08	-.400	.828	.214	-.859	.059	-1.871	14	.082

Section 1: General Self-Efficacy – Paired Sample t-Test - T1>T3

T1>T3		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	01	-.133	1.060	.274	-.720	.454	-.487	14	.634
Pair 2	02	-.600	.910	.235	-1.104	-.096	-2.553	14	.023
Pair 3	03	.067	1.033	.267	-.505	.639	.250	14	.806
Pair 4	04	.000	1.000	.258	-.554	.554	.000	14	1.000
Pair 5	05	-.400	.910	.235	-.904	.104	-1.702	14	.111
Pair 6	06	.200	.862	.223	-.277	.677	.899	14	.384
Pair 7	07	-.333	.724	.187	-.734	.067	-1.784	14	.096
Pair 8	08	-.200	.941	.243	-.721	.321	-.823	14	.424

Section 1: General Self-Efficacy – Paired Sample t-Test - T2>T3

T2>T3		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	01	.200	.775	.200	-.229	.629	1.000	14	.334
Pair 2	02	-.267	.594	.153	-.595	.062	-1.740	14	.104
Pair 3	03	-.133	.743	.192	-.545	.278	-.695	14	.499
Pair 4	04	.133	.834	.215	-.328	.595	.619	14	.546
Pair 5	05	.000	.756	.195	-.419	.419	.000	14	1.000
Pair 6	06	.267	.884	.228	-.223	.756	1.169	14	.262
Pair 7	07	-.267	.704	.182	-.656	.123	-1.468	14	.164
Pair 8	08	.200	.775	.200	-.229	.629	1.000	14	.334

Section 2: Writing Self-Efficacy

Section 2: Writing Self-Efficacy – Paired Sample t-Test -T1>T2

T1>T2		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	01	.067	.799	.206	-.376	.509	.323	14	.751
Pair 2	02	-.067	.799	.206	-.509	.376	-.323	14	.751
Pair 3	03	.333	.724	.187	-.067	.734	1.784	14	.096
Pair 4	04	.200	.941	.243	-.321	.721	.823	14	.424
Pair 5	05	-.133	.834	.215	-.595	.328	-.619	14	.546
Pair 6	06	.333	.816	.211	-.119	.785	1.581	14	.136
Pair 7	07	.000	.845	.218	-.468	.468	.000	14	1.000
Pair 8	08	.067	.799	.206	-.376	.509	.323	14	.751
Pair 9	09	.067	.704	.182	-.323	.456	.367	14	.719
Pair 10	10	.067	.799	.206	-.376	.509	.323	14	.751
Pair 11	11	.067	.799	.206	-.376	.509	.323	14	.751
Pair 12	12	-.333	.724	.187	-.734	.067	-1.784	14	.096
Pair 13	13	-.533	.834	.215	-.995	-.072	-2.477	14	.027
Pair 14	14	.200	.941	.243	-.321	.721	.823	14	.424
Pair 15	15	.000	1.038	.277	-.599	.599	.000	13	1.000
Pair 16	16	.133	.834	.215	-.328	.595	.619	14	.546
Pair 17	17	.067	.884	.228	-.423	.556	.29.2	14	.774
Pair 18	18	.133	.915	.236	-.374	.640	.564	14	582

Section 2: Writing Self-Efficacy – Paired Sample t-Test -T1>T3

T1>T3		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	01	.067	.704	.182	-.323	.456	.367	14	.719
Pair 2	02	-.333	.617	.159	-.675	.008	-2.092	14	.055
Pair 3	03	.267	.704	.182	-.123	.656	1.468	14	.164
Pair 4	04	.000	.756	.195	-.419	.419	.000	14	1.000
Pair 5	05	-.267	.884	.228	-.756	.223	-1.169	14	.262
Pair 6	06	-.200	.676	.175	-.574	.174	-1.146	14	.271
Pair 7	07	-.333	.900	.232	-.832	.165	-1.435	14	.173
Pair 8	08	-.067	.704	.182	-.456	.323	-.367	14	.719
Pair 9	09	.067	.961	.248	-.466	.599	.269	14	.792
Pair 10	10	.000	.845	.218	-.468	.468	.000	14	1.000
Pair 11	11	.067	.799	.206	-.376	.509	.323	14	.751
Pair 12	12	-.133	.915	.236	-.640	.374	-.564	14	.582
Pair 13	13	-.333	.816	.211	-.785	.119	-1.581	14	.136
Pair 14	14	.067	.594	.153	-.262	.395	.435	14	.670
Pair 15	15	.000	.877	.234	-.506	.506	.000	13	1.000
Pair 16	16	-.133	.834	.215	-.595	.328	-.619	14	.546
Pair 17	17	-.200	.941	.243	-.721	.321	-.823	14	.424
Pair 18	18	-.267	.884	.228	-.756	.223	-1.169	14	.262

Section 2: Writing Self-Efficacy – Paired Sample t-Test -T2>T3									
T2>T3		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	01	.000	.655	.169	-.363	.363	.000	14	1.000
Pair 2	02	-.267	.594	.153	-.595	.062	-1.740	14	.104
Pair 3	03	-.067	.799	.206	-.509	.376	-.323	14	.751
Pair 4	04	-.200	.862	.223	-.677	.277	-.899	14	.384
Pair 5	05	-.133	.743	.192	-.545	.278	-.695	14	.499
Pair 6	06	-.533	.516	.133	-.819	-.247	-4.000	14	.001
Pair 7	07	-.333	.900	.232	-.832	.165	-1.435	14	.173
Pair 8	08	-.133	.640	.165	-.488	.221	-.807	14	.433
Pair 9	09	.000	1.000	.258	-.554	.554	.000	14	1.000
Pair 10	10	-.067	.704	.182	-.456	.323	-.367	14	.719
Pair 11	11	.000	.655	.169	-.363	.363	.000	14	1.000
Pair 12	12	.200	1.014	.262	-.362	.762	.764	14	.458
Pair 13	13	.200	.676	.175	-.174	.574	1.146	14	.271
Pair 14	14	-.133	.640	.165	-.488	.221	-.807	14	.433
Pair 15	15	-.067	.458	.118	-.320	.187	-.564	14	.582
Pair 16	16	-.267	.704	.182	-.656	.123	-1.468	14	.164
Pair 17	17	-.267	.704	.182	-.656	.123	-1.468	14	.164
Pair 18	18	-.400	.632	.163	-.750	-.050	-2.449	14	.028

Section 3P: Planning Writing - Self-Regulation

Section 3: Planning Writing – Self-Regulation – Paired Sample t-Test -T1>T2									
T1>T2		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	01	.133	1.060	.274	-.454	.720	.487	14	.634
Pair 2	02	.200	1.082	.279	-.399	.799	.716	14	.486
Pair 3	03	-.133	.743	.192	-.545	.278	-.695	14	.499
Pair 4	04	.267	.704	.182	-.123	.656	1.468	14	.164
Pair 5	05	.000	1.069	.276	-.592	.592	.000	14	1.000
Pair 6	06	-.133	.915	.236	-.640	.374	-.564	14	.582
Pair 7	07	.067	.961	.248	-.466	.599	.269	14	.792
Pair 8	08	.200	1.146	.296	-.435	.835	.676	14	.510
Pair 9	09	.133	1.125	.291	-.490	.757	.459	14	.653
Pair 10	10	.200	.775	.200	-.229	.629	1.000	14	.334

Section 3: Planning Writing – Self-Regulation – Paired Sample t-Test -T1>T2									
T1>T3		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	01	-.067	.961	.248	-.599	.466	-.269	14	.792
Pair 2	02	.200	1.265	.327	-.500	.900	.612	14	.550
Pair 3	03	-.133	1.060	.274	-.720	.454	-.487	14	.634
Pair 4	04	.200	.941	.243	-.321	.721	.823	14	.424
Pair 5	05	-.400	1.352	.349	-1.149	.349	-1.146	14	.271
Pair 6	06	.067	.884	.228	-.423	.556	.292	14	.774
Pair 7	07	.200	.862	.223	-.277	.677	.899	14	.384
Pair 8	08	.067	.884	.228	-.423	.556	.292	14	.774
Pair 9	09	-.200	1.082	.279	-.799	.399	-.716	14	.486
Pair 10	10	-.133	.743	.192	-.545	.278	-.695	14	.499

Section 3: Planning Writing – Self-Regulation – Paired Sample t-Test -T2>T3									
T2>T3		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	01	-.200	.676	.175	-.574	.174	-1.146	14	.271
Pair 2	02	.000	.926	.239	-.513	.513	.000	14	1.000
Pair 3	03	.000	.845	.218	-.468	.468	.000	14	1.000
Pair 4	04	-.067	.704	.182	-.456	.323	-.367	14	.719
Pair 5	05	-.400	.910	.235	-.904	.104	-1.702	14	.111
Pair 6	06	.200	.941	.243	-.321	.721	.823	14	.424
Pair 7	07	.133	.743	.192	-.278	.545	.695	14	.499
Pair 8	08	-.133	1.356	.350	-.884	.617	-.381	14	.709
Pair 9	09	-.333	1.345	.347	-1.078	.412	-.960	14	.353
Pair 10	10	-.333	.900	.232	-.832	.165	-1.435	14	.173

Section 3D: During Writing - Self-Regulation

Section 3: During Writing – Self-Regulation – Paired Sample t-Test -T1>T2

T1>T2		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	11	-.133	.743	.192	-.545	.278	-.695	14	.499
Pair 2	12	-.200	1.424	.368	-.989	.589	-.544	14	.595
Pair 3	13	.133	.990	.256	-.415	.682	.521	14	.610
Pair 4	14	.000	.378	.098	-.209	.209	.000	14	1.000
Pair 5	15	.000	.926	.239	-.513	.513	.000	14	1.000
Pair 6	16	.133	.915	.236	-.374	.640	.564	14	.582
Pair 7	17	.067	.961	.248	-.466	.599	.269	14	.792
Pair 8	18	-.133	.834	.215	-.595	.328	-.619	14	.546
Pair 9	19	.400	1.056	.273	-.185	.985	1.468	14	.164
Pair 10	20	-.333	.816	.211	-.785	.119	-1.581	14	.136
Pair 11	21	-.200	1.207	.312	-.868	.468	-.642	14	.531
Pair 12	22	-.533	.990	.256	-1.082	.015	-2.086	14	.056
Pair 13	23	.267	.884	.228	-.223	.756	1.169	14	.262
Pair 14	24	.133	.915	.236	-.374	.640	.564	14	.582
Pair 15	25	.200	.676	.175	-.174	.574	1.146	14	.271
Pair 16	26	.133	.915	.236	-.374	.640	.564	14	.582
Pair 17	27	-.200	1.014	.262	-.762	.362	-.764	14	.458

Section 3: During Writing – Self-Regulation – Paired Sample t-Test -T1>T3

T1>T3		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	11	-.200	1.082	.279	-.799	.399	-.716	14	.486
Pair 2	12	-.133	.915	.236	-.640	.374	-.564	14	.582
Pair 3	13	.333	.900	.232	-.165	.832	1.435	14	.173
Pair 4	14	-.267	.704	.182	-.656	.123	-1.468	14	.164
Pair 5	15	.067	1.223	.316	-.610	.744	.211	14	.836
Pair 6	16	.467	.990	.256	-.082	1.015	1.825	14	.089
Pair 7	17	.133	1.302	.336	-.588	.854	.397	14	.698
Pair 8	18	.000	.845	.218	-.468	.468	.000	14	1.000
Pair 9	19	.000	1.069	.276	-.592	.592	.000	14	1.000
Pair 10	20	-.133	.990	.256	-.682	.415	-.521	14	.610
Pair 11	21	-.133	1.407	.363	-.913	.646	-.367	14	.719
Pair 12	22	.067	.799	.206	-.376	.509	.323	14	.751
Pair 13	23	.133	1.407	.363	-.646	.913	.367	14	.719
Pair 14	24	.200	.775	.200	-.229	.629	1.000	14	.334
Pair 15	25	.267	1.387	.358	-.501	1.035	.745	14	.469
Pair 16	26	.333	1.291	.333	-.382	1.048	1.000	14	.334
Pair 17	27	.067	1.163	.300	-.577	.711	.222	14	.827

Section 3: During Writing – Self-Regulation – Paired Sample t-Test -T2>T3									
T2>T3		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	11	-.067	1.033	.267	-.639	.505	-.250	14	.806
Pair 2	12	.067	1.033	.267	-.505	.639	.250	14	.806
Pair 3	13	.200	.862	.223	-.277	.677	.899	14	.384
Pair 4	14	-.267	.799	.206	-.709	.176	-1.293	14	.217
Pair 5	15	.067	1.387	.358	-.701	.835	.186	14	.855
Pair 6	16	.333	.724	.187	-.067	.734	1.784	14	.096
Pair 7	17	.067	.704	.182	-.323	.456	.367	14	.719
Pair 8	18	.133	.990	.256	-.415	.682	.521	14	.610
Pair 9	19	-.400	.986	.254	-.946	.146	-1.572	14	.138
Pair 10	20	.200	1.082	.279	-.399	.799	.716	14	.486
Pair 11	21	.067	.799	.206	-.376	.509	.323	14	.751
Pair 12	22	.600	1.183	.306	-.055	1.255	1.964	14	.070
Pair 13	23	-.133	1.246	.322	-.823	.557	-.414	14	.685
Pair 14	24	.067	.799	.206	-.376	.509	.323	14	.751
Pair 15	25	.067	1.387	.358	-.701	.835	.186	14	.855
Pair 16	26	.200	1.082	.279	-.399	.799	.716	14	.486
Pair 17	27	.267	1.163	.300	-.377	.911	.888	14	.389

Section 3R: Reflecting on Writing - Self-Regulation

Section 3: Reflecting on Writing – Self-Regulation – Paired Sample t-Test -T1>T2									
T1>T2		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	28	.267	.704	.182	-.123	.656	1.468	14	.164
Pair 2	29	.200	.414	.107	-.029	.429	1.871	14	.082
Pair 3	30	-.067	.704	.182	-.456	.323	-.367	14	.719
Pair 4	31	.000	.756	.195	-.419	.419	.000	14	1.000
Pair 5	32	.333	.976	.252	-.207	.874	1.323	14	.207
Pair 6	33	-.267	.884	.228	-.756	.223	-1.169	14	.262
Pair 7	34	.467	.834	.215	.005	.928	2.168	14	.048
Pair 8	35	.000	1.000	.258	-.554	.554	.000	14	1.000
Pair 9	36	-.067	.594	.153	-.395	.262	-.435	14	.670
Pair 10	37	.267	1.223	.316	-.410	.944	.845	14	.413
Pair 11	38	.200	1.146	.296	-.435	.835	.676	14	.510

Section 3: Reflecting on Writing – Self-Regulation – Paired Sample t-Test -T1>T3									
T1>T3		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	28	.533	.834	.215	.072	.995	2.477	14	.027
Pair 2	29	-.067	.704	.182	-.456	.323	-.367	14	.719
Pair 3	30	-.067	1.100	.284	-.676	.542	-.235	14	.818
Pair 4	31	-.067	.704	.182	-.456	.323	-.367	14	.719
Pair 5	32	.467	.990	.256	-.082	1.015	1.825	14	.089
Pair 6	33	-.400	.986	.254	-.946	.146	-1.572	14	.138
Pair 7	34	.067	1.223	.316	-.610	.744	.211	14	.836
Pair 8	35	.467	1.598	.413	-.418	1.351	1.131	14	.277
Pair 9	36	-.400	1.298	.335	-1.119	.319	-1.193	14	.253
Pair 10	37	.667	.900	.232	.168	1.165	2.870	14	.012
Pair 11	38	-.133	.834	.215	-.595	.328	-.619	14	.546

Section 3: Reflecting on Writing – Self-Regulation – Paired Sample t-Test -T2>T3									
T2>T3		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	28	.267	.458	.118	.013	.520	2.256	14	.041
Pair 2	29	-.267	.799	.206	-.709	.176	-1.293	14	.217
Pair 3	30	.000	.845	.218	-.468	.468	.000	14	1.000
Pair 4	31	-.067	1.033	.267	-.639	.505	-.250	14	.806
Pair 5	32	.133	.915	.236	-.374	.640	.564	14	.582
Pair 6	33	-.133	1.246	.322	-.823	.557	-.414	14	.685
Pair 7	34	-.400	.737	.190	-.808	.008	-2.103	14	.054
Pair 8	35	.467	1.060	.274	-.120	1.054	1.705	14	.110
Pair 9	36	-.333	1.175	.303	-.984	.317	-1.099	14	.290
Pair 10	37	.400	.828	.214	-.059	.859	1.871	14	.082
Pair 11	38	-.333	1.113	.287	-.950	.283	-1.160	14	.265

Section 4: Oral Communications - Self-Efficacy

Section 4: Oral Communications – Self-Efficacy – Paired Sample t-Test -T1>T2									
T1>T2		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	01	-.071	.616	.165	-.427	.284	-.434	13	.671
Pair 2	02	.143	.663	.177	-.240	.526	.806	13	.435
Pair 3	03	-.357	.842	.225	-.843	.129	-1.587	13	.136
Pair 4	04	-.143	1.167	.312	-.817	.531	-.458	13	.655
Pair 5	05	.286	.726	.194	-.134	.705	1.472	13	.165
Pair 6	06	-.286	.726	.194	-.705	.134	-1.472	13	.165
Pair 7	07	-.357	.633	.169	-.723	.009	-2.110	13	.055
Pair 8	08	-.071	.997	.267	-.647	.504	-.268	13	.793
Pair 9	09	-.357	1.216	.325	-1.059	.345	-1.099	13	.292
Pair 10	10	.071	.730	.195	-.350	.493	.366	13	.720
Pair 11	11	.000	.877	.234	-.506	.506	.000	13	1.000
Pair 12	12	.000	.877	.234	-.506	.506	.000	13	1.000
Pair 13	13	-.071	.475	.127	-.345	.203	-.563	13	.583
Pair 14	14	-.286	.825	.221	-.762	.191	-1.295	13	.218
Pair 15	15	.357	1.393	.372	-.447	1.161	.960	13	.355
Pair 16	16	-.333	.617	.159	-.675	.008	-2.092	14	.055
Pair 17	17	-.067	.884	.228	-.556	.423	-.292	14	.774
Pair 18	18	.000	.756	.195	-.419	.419	.000	14	1.000
Pair 19	19	-.267	.594	.153	-.595	.062	-1.740	14	.104
Pair 20	20	.071	.997	.267	-.504	.647	.268	13	.793
Pair 21	21	-.267	.884	.228	-.756	.223	-1.169	14	.262
Pair 22	22	-.357	.842	.225	-.843	.129	-1.587	13	.136
Pair 23	23	.067	1.033	.267	-.505	.639	.250	14	.806

Section 4: Oral Communications – Self-Efficacy – Paired Sample t-Test -T1>T3

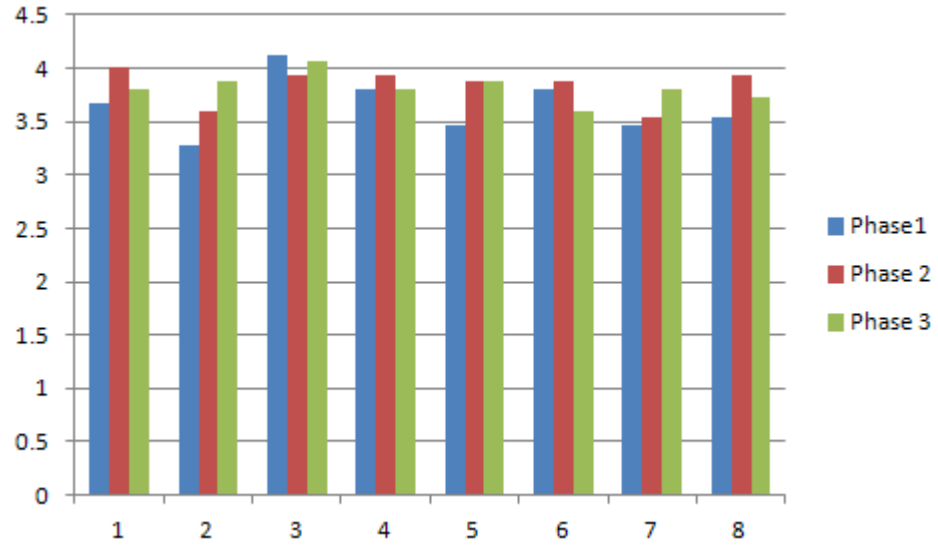
T1>T3		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	01	-.071	.616	.165	-.427	.284	-.434	13	.671
Pair 2	02	.000	.961	.257	-.555	.555	.000	13	1.000
Pair 3	03	-.071	1.207	.322	-.768	.625	-.221	13	.828
Pair 4	04	.071	.997	.267	-.504	.647	.268	13	.793
Pair 5	05	.071	.829	.221	-.407	.550	.322	13	.752
Pair 6	06	-.357	1.082	.289	-.982	.267	-1.235	13	.239
Pair 7	07	-.286	.994	.266	-.860	.288	-1.075	13	.302
Pair 8	08	-.071	.917	.245	-.601	.458	-.291	13	.775
Pair 9	09	-.286	1.069	.286	-.903	.332	-1.000	13	.336
Pair 10	10	.071	.730	.195	-.350	.493	.366	13	.720
Pair 11	11	.000	.877	.234	-.506	.506	.000	13	1.000
Pair 12	12	-.214	1.122	.300	-.862	.433	-.715	13	.487
Pair 13	13	-.357	.929	.248	-.893	.179	-1.439	13	.174
Pair 14	14	-.429	.756	.202	-.865	.008	-2.121	13	.054
Pair 15	15	.143	1.167	.312	-.531	.817	.458	13	.655
Pair 16	16	.000	.535	.138	-.296	.296	.000	14	1.000
Pair 17	17	-.267	.884	.228	-.756	.223	-1.169	14	.262
Pair 18	18	-.267	1.033	.267	-.839	.305	-1.000	14	.334
Pair 19	19	-.133	.743	.192	-.545	.278	-.695	14	.499
Pair 20	20	-.267	1.033	.267	-.839	.305	-1.000	14	.334
Pair 21	21	-.400	1.242	.321	-1.088	.288	-1.247	14	.233
Pair 22	22	.071	.829	.221	-.407	.550	.322	13	.752
Pair 23	23	-.333	.816	.211	-.785	.119	-1.581	14	.136

Section 4: Oral Communications – Self-Efficacy – Paired Sample t-Test -T2>T3									
T2>T3		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	01	-.067	.458	.118	-.320	.187	-.564	14	.582
Pair 2	02	-.143	.770	.206	-.588	.302	-.694	13	.500
Pair 3	03	.286	1.437	.384	-.544	1.116	.744	13	.470
Pair 4	04	.200	.775	.200	-.229	.629	1.000	14	.334
Pair 5	05	-.214	.975	.261	-.777	.349	-.822	13	.426
Pair 6	06	-.200	1.207	.312	-.868	.468	-.642	14	.531
Pair 7	07	.133	.990	.256	-.415	.682	.521	14	.610
Pair 8	08	.000	1.069	.276	-.592	.592	.000	14	1.000
Pair 9	09	.000	.845	.218	-.468	.468	.000	14	1.000
Pair 10	10	-.067	.704	.182	-.456	.323	-.367	14	.719
Pair 11	11	-.067	.884	.228	-.556	.423	-.292	14	.774
Pair 12	12	-.200	.775	.200	-.629	.229	-1.000	14	.334
Pair 13	13	-.200	.941	.243	-.721	.321	-.823	14	.424
Pair 14	14	-.067	.961	.248	-.599	.466	-.269	14	.792
Pair 15	15	-.267	.884	.228	-.756	.223	-1.169	14	.262
Pair 16	16	.333	.724	.187	-.067	.734	1.784	14	.096
Pair 17	17	-.200	1.082	.279	-.799	.399	-.716	14	.486
Pair 18	18	-.267	1.223	.316	-.944	.410	-.845	14	.413
Pair 19	19	.133	.834	.215	-.328	.595	.619	14	.546
Pair 20	20	-.286	.726	.194	-.705	.134	-1.472	13	.165
Pair 21	21	-.133	.743	.192	-.545	.278	-.695	14	.499
Pair 22	22	.400	1.056	.273	-.185	.985	1.468	14	.164
Pair 23	23	-.400	.986	.254	-.946	.146	-1.572	14	.138

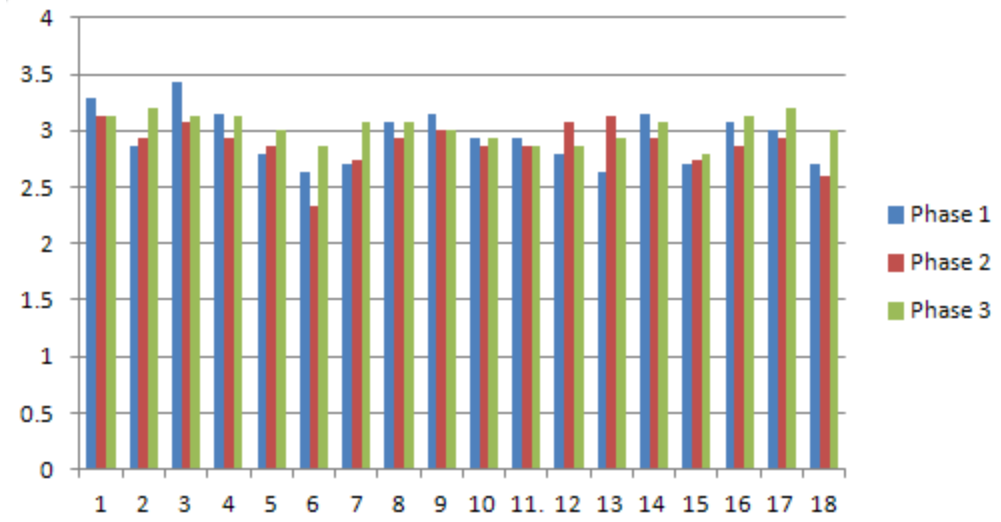
Appendix W: Student Survey – Response Graphs

Section 1: General Self-Efficacy

Section 1: General Self-Efficacy - n=15
1-Strongly Disagree, 2-Disagree, 3-Undecided. 4-Agree, 5-Strongly Agree
1. I will be able to achieve most of the goals that I have set for myself.
2. When facing difficult tasks, I am certain that I will accomplish them.
3. In general, I think that I can obtain outcomes that are important to me
4. I believe I can succeed at most any endeavor to which I set my mind.
5. I will be able to successfully overcome many challenges.
6. I am confident that I can perform effectively on many different tasks.
7. Compared to other people, I can do most tasks very well.
8. Even when things are tough, I can perform quite well.

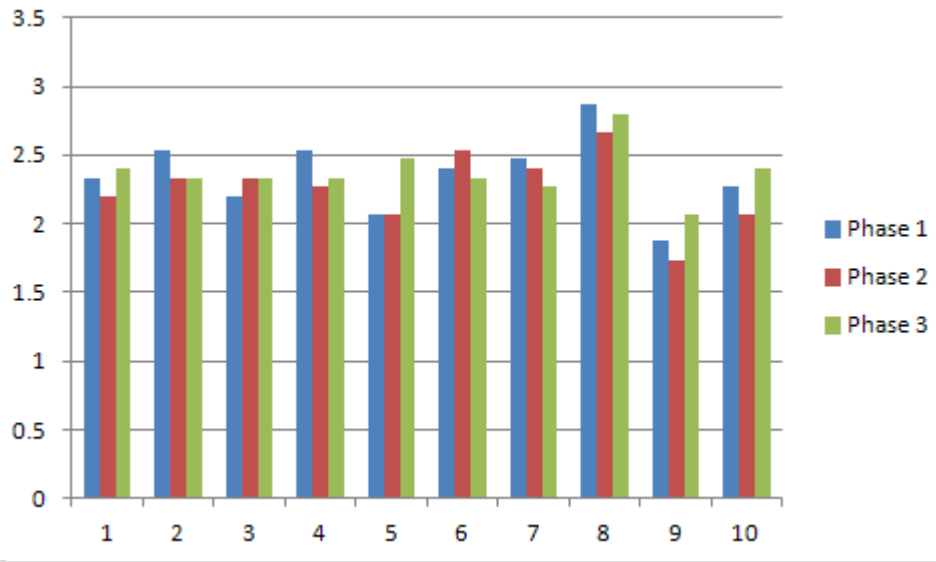


Section 2: Writing Self-Efficacy

Section 2: Writing Self-Efficacy – n=15
1- I do not do it well at all, 2- I do not do it well, 3- I do it well, 4- I do it very well.
1. I can write an interesting and appropriate response to a given topic.
2. I can easily cover all the information that should be dealt with in a given topic
3. I can use an appropriate writing style for the task.
4. I can generate ideas to write about easily.
5. I can think of ideas rapidly when given a topic to write about.
6. I can write on an assigned topic without difficulty.
7. I can easily find examples to support my ideas.
8. I can write grammatically correct sentences in my compositions.
9. I can edit my compositions for mistakes such as punctuation, capitalization, paragraphing.
10. I can link ideas together easily.
11. I can use transition words correctly to make my composition a better one.
12. I can use a wide range of vocabulary in my compositions.
13. I can use synonyms in a composition rather than repeating the same words over and over again.
14. I can write a brief and informative overview of a given topic.
15. I can manage my time efficiently to meet a deadline on a piece of writing.
16. I can rewrite my wordy or confusing sentences to make them clearer.
17. I can choose and defend a point of view.
18. I can fulfill a writing task without difficulty within a given time limit.

QUESTION #

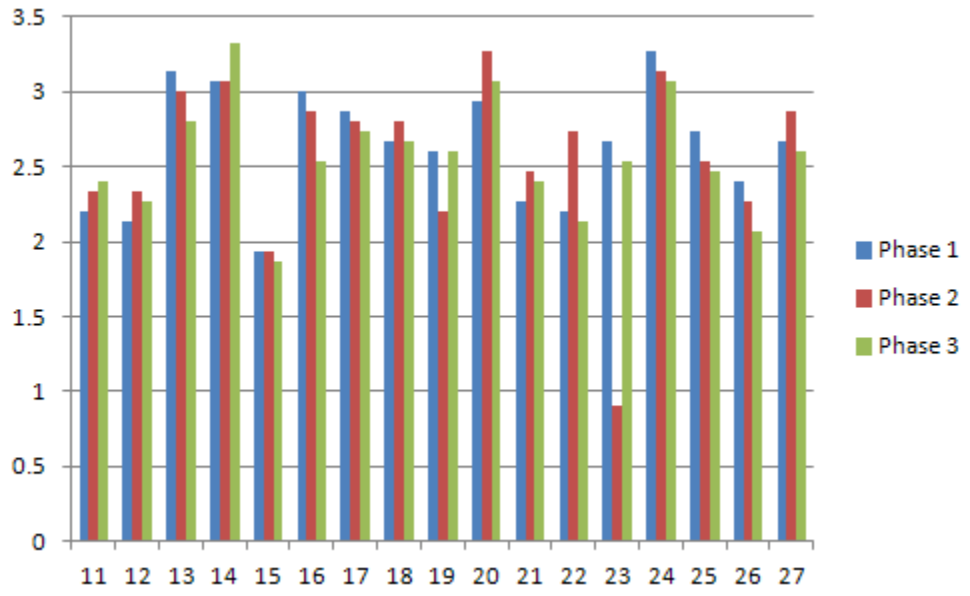
Section 3P: Planning Writing - Self-Regulation (Appendix _____, Table ____): The

Section 3P: Planning Writing - Self-Regulation – n=15
1-Never, 2-Sometimes, 3-Often, 4-Always
1. I create goals for every writing task I need to accomplish.
2. I plan the contents of the things that I will write.
3. I take note of my purpose for a specific writing task.
4. I think of my target audience and reason for writing a certain piece.
5. I set a specific time in which I would write.
6. I visualize my written output first before I begin writing.
7. I have a certain length in mind for the paper that I will work on.
8. I brainstorm for ideas before I write.
9. I use graphic organizers to manage my ideas.
10. I create an outline before I write.



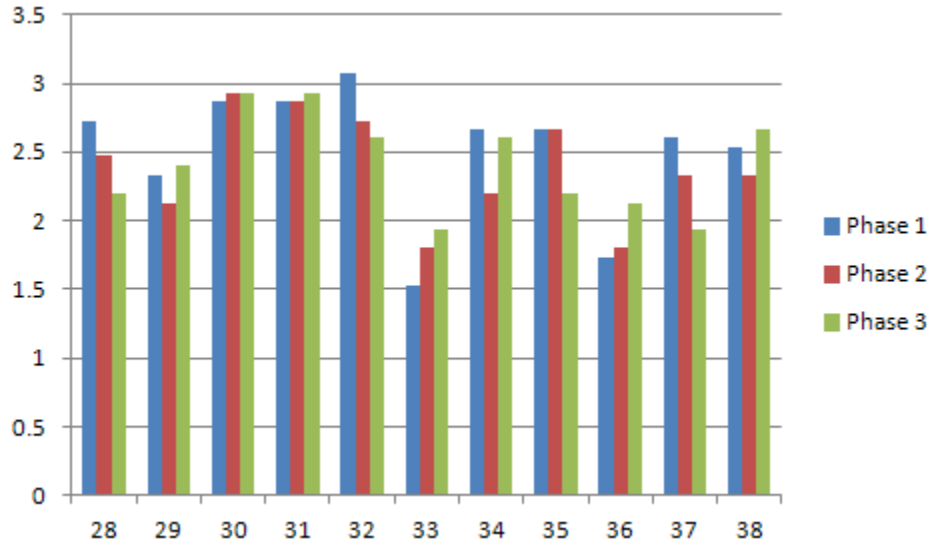
Section 3D: During Writing - Self-Regulation

Section 3D: During Writing - Self-Regulation – n=15
1-Never, 2-Sometimes, 3-Often, 4-Always
11. I create a draft before writing the final paper.
12. I use certain writing strategies such as annotating, outlining, etc. whenever doing a writing task.
13. I proofread my work.
14. I aim to create a paper with no grammatical errors.
15. I ask my peers to edit my writing.
16. I ask a teacher to evaluate my writing and give suggestions for revising.
17. I use word processing software to check for errors in my writing.
18. I reread my work several times to look for errors in my writing.
19. I use the writing approach of planning, organizing, writing, editing and revising…
20. I take into consideration the comments of other people about my writing.
21. I like talking with my friends while doing a writing task. I write so that I can gather more ideas from them.
22. I prefer having people or friends around when I write so that I can gather more ideas from them.
23. I don't let others disturb me when I am writing.
24. I accomplish all my writing tasks at my own pace.
25. I usually do my writing tasks in a quiet place where there isn't much noise.
26. I like to multi-task (work on more than one thing) whenever I write.
27. I don't like writing in a crowded place.



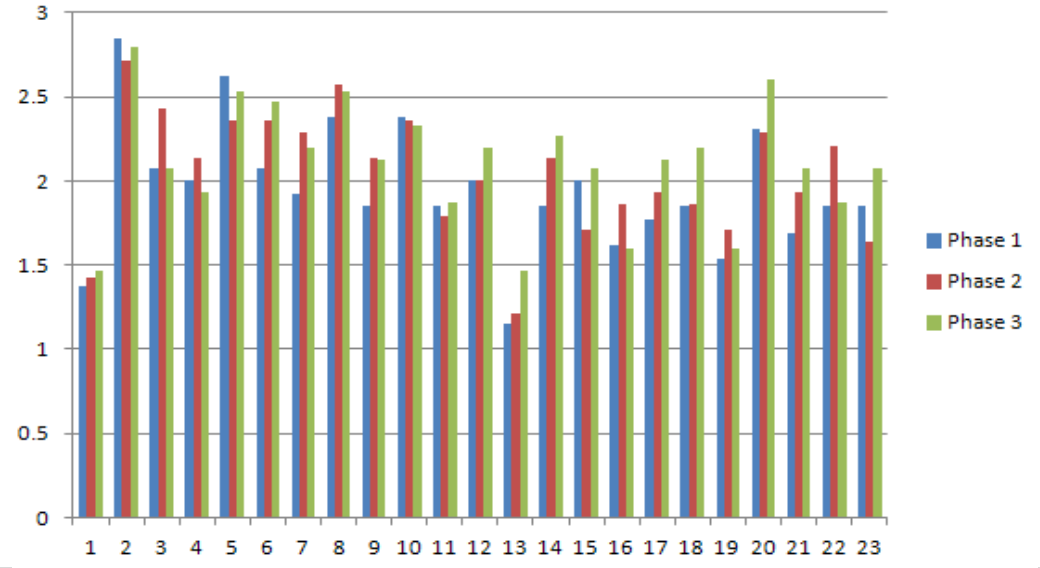
Section 3R: Reflecting on Writing - Self-Regulation

Section 3R: Reflecting on Writing - n=15
1-Never, 2-Sometimes, 3-Often, 4-Always
28. When I receive a low mark on a certain writing activity, I will plan my next activity in a more detailed manner.
29. I read more so that I have a wide range of knowledge for the next writing task.
30. I take note of the comments of the teacher and make sure that I apply them in the next writing activity.
31. I read my work carefully and look for where I may have made an error.
32. I ask my teacher for possible improvements I can make in my written outputs.
33. I keep a writing portfolio so that I can see the progress and development of my writing.
34. I eliminate distractions that might have interfered with my writing.
35. I'll extensively familiarize myself with the next topic I will write about.
36. I'll use a thesaurus to enrich my writing and vocabulary in the next writing activity.
37. I'll read aloud what I have written so that I can check what sounds good and what doesn't.
38. I will look for ways to ensure that the audience of my next writing task will be interested in my composition.



Section 4: Oral Communications - Self-Efficacy

Section 4: Oral Communications - Self-Efficacy - n=15
1-Always True, 2-Mostly True, 3-Mostly False, 4-Always False
1. I don't mind asking the teacher a question in class.
2. Sometimes I can't figure out what to say.
3. It is harder for me to give a report in class than it is for most of the other kids.
4. I like the way I talk.
5. People sometimes finish my words for me.
6. I find it easy to talk to most everyone.
7. It is hard for me to talk to people.
8. I don't worry about the way I talk.
9. I don't find it easy to talk in front of other people.
10. It is easy for me to figure out what to say.
11. I'm afraid that kids will make fun of me when I talk.
12. Talking is easy for me.
13. Telling someone my name is hard for me.
14. I talk well with most everyone.
15. I would rather talk than write.
16. I like to talk.
17. I am not a good talker.
18. I wish I could talk like other students.
19. I let others talk for me.
20. Reading aloud in class is easy for me.
21. I am good at sharing my ideas during class.
22. I like to answer questions that people ask me.
23. I worry about asking questions during class.



Appendix X: WeJay Activity Theory Checklist

Activity Theory Checklist	
WeJay as a Mediating Artifact	**Self-Efficacy, Self-Regulation, Task Value, Motivation, and Tool Compensation**
MEANS & ENDS	
1. All features functional and operational as expected? A subset of features was available and functional during this study. However, several issues arose which were problematic and required alternative pathways to accomplish activity objectives. *File Types:* On the Mac platform, MP3 file types could not be dragged to the playlist unless they were imported to iTunes first. On the Windows 7 platform, some MP3 files worked and others did not. Again, importing the file to iTunes was required. *File Locations:* On the Windows 7, some MP3 files could be dragged to the WeJay playlist from a thumb drive and student network drives, but this did not work on Macs. Additionally, students wanted to drag files from their iPods to the WeJay playlist, but could not – again their music had to be downloaded to the computer's iTunes library for both Mac and Windows 7 environments. *Malfunctions:* Occasionally files that were dragged to the playlist aborted, skipped, or did not start at the beginning. It was discovered that it was important to have a segment of silence at the beginning of files so that they would not lose audio. *Friending and chatting* worked as expected. Students expressed a desire to invite friends outside of the project space who were not students in the high school. They accepted that this would not be possible during this beta trial study, but would be allowed at a future date. The study environment limited the extent to which students might have used the friending, co-show creation and chatting features.	**Task Value** Limiting friending to study participants was accepted and did not impact student's desire to create shows. The WeJay co-hosting and chat features were used only during the initial practice session. This lack of use may suggest that these features were not integral to motivation of student productions of radio shows. One student, upon first learning about WeJay's features, noted that he could use it to "get his band's music out there" (Hawk7). He wanted to load WeJay on his cell phone – and tell his friends to do the same. (Note this feature was expected but was not added in time to be experienced for this study.) **Compensation - Technical Support** These issues necessitated interventions and support by the researcher as staff did not have the technical expertise to understand, troubleshoot, or determine workarounds for problems students encountered. It is expected that the limitations and idiosyncrasies described above will be addressed in a future release.

2. Limitations vs. Goals Issues beyond the researcher's control required that WeJay be used without certain features which were expected to be available in the beta trial. In this study the "tool" was critical to achieving the objectives and outcome of the activity, and based on analysis of the qualitative data, considered motivating and supportive of student communication and collaboration in a manner which fostered self-efficacy, self-regulation and motivation. It was agreed at the inception of the study, that alternative or complementary solutions be identified to supplement WeJay should gaps in expected features be identified. As noted in 1 and 2 above, several limitations in the beta version of WeJay as well as requirements necessitating features beyond the scope of WeJay required the use of other technologies.	**Compensation - Complementary Technologies** A combination of technologies was identified to fill WeJay™ gaps. Microsoft Word and Google Docs were used to write show scripts. (Some students preferred to use pen and paper for this step.) Audacity and Garage Band were used to record student narrated podcasts and music compositions. Google Sites and SoundCloud platforms supported (http://soundcloud.com/information-connections) persistence of student shows and sharing in the high school, with administrative staff in central office, as well as with parents and guardians. The Hawk's Nest Google Site (http://tinyurl.com/HawksNestRVRadio) was used to showcase the radio station.
LEARNING / COGNITION / ARTICULATION	
1. Does this technology provide representations of user activities that support goal setting and self-evaluation (Self-Regulation)?	WeJay, along with complementary technology, provided a toolset which allowed students and staff to achieve the objectives of the activity – production of radio programs.
DEVELOPMENT	
1. Consequences of technology on target actions? 2. Are user's attitudes toward the technology becoming more or less positive?	The tools provided end-to-end support for the steps required to publish audio podcasts and share in real-time on WeJay and persistently in Sound Cloud. MS Word was the preferred tool to draft and publish scripts, Garage band and Audacity were used to record audio. They learned to use Audacity and most used it with little support. Students were eager to complete their scripts, engage in audio recording, and finally sharing and uploading their productions to SoundCloud.
3. Were expected benefits realized?	Students were critical of their own work and final productions, some recording multiple takes until they were satisfied.
4. Are there negative or positive side-effects associated with use of the system?	Staff and students voiced a strong desire to continue producing radio shows beyond the WeJay project. Plans are already in-process for Fall 2013.

Appendix Y: Radio Show Production List

http://soundcloud.com/information-connections

Hawk 21	Movie Review – Dark Man
Hawk 21	Movie Review - The Fly
Hawk 24	News Commentary – Christopher Whaley
Hawk 28 (Hawk 27 co-host)	World Wrestling Entertainment & Wrestle Mania – 9 Shows
Hawk 35	Movie Review – Transformers
Hawk 28	Lead up to Wrestle Mania
Hawk 24	911 Reflection
Hawk 20	Road Test
Hawk 14 for Hawk 10	The Hippie Movement (Hawk 14 selected music and read Hawk 10's research report)
Hawk 13 & Hawk 31	Advice Column
Hawk 18	Economy Interview
Hawk 22	Joining the Marines, Becoming a Firefighter
Hawk 8	Bowling Shirts
Hawk 13	Academy Awards
Hawk 19	Newton's Physics
Hawk 29	Catcher in the Rye Excerpt
Hawk 20	Android vs. iPhone
Hawk 19 & Hawk 27	NFL & Super Bowl – 4 Shows
Hawk 21 (authored)	3 Poems
Hawk 24	Joining the Swat Team
Hawk 24	Joining the Police Academy
Hawk 21	I Love Fast Food
Hawk 12	The Reason It's the Way – Personal Reflection
Hawk's 7,15, 16, 17, 25, 32	Student composed music & iTunes Music Sharing

Appendix Z: Student During-WeJay Artifact Samples

Hawk 14 - During WeJay - Page 1 of 2

The Meaning of Love

What is the meaning of love, I shutter to ask

Is love what makes my palms sweaty and my heart beat fast?

Is love the way I look into your eyes?

Is love spending evenings catching fireflies?

Or is love gazing at the moon and the stars?

Is love what makes us question who we really are?

Or is love what makes time stand still?

Is love the thing that makes me ill?

What is the meaning of love, I shutter to ask

All I know is finding love, is no easy task

It is an ugly, difficult, but wonderful thing

It may hurt at first but the reward is worth the sting

So I ask myself again, where its meaning truly lies

I am sure I'll remember its meaning, when I look into your eyes

Hawk 17 - During WeJay - 3/29/2012

where Dubstep come from?

Dubstep in general came from old time Jamaica it was known "A Dub Tune," or Dub. Its sounds quickly spread and about a decade ago in a South London Town called Croydon.

~~A Description~~. what's a description of Dubstep?

Hawk 17 - During WeJay - 3/29/2012

Just like everything in life nothing sounds the same to two different people.

1. Messinian - Unruly
2. Capt. Kisses - Acid Wolfpack
3. Fizzey - Eastern Mix
4. Tonik - Oblivion
5. Sikstring - Natural High
6. Ellie Goulding - Starry-eyed (Jakwob)

9 / 11

Hawk 24 - During WeJay 3/26/2012 - 1 of 2

1) Thousands of people died in 9/11 and my neighbor Joe Marchbank Jr. was one of them.

5) Joe was Standing in the lobby of tower 2 (The South tower) When it Collapsed.

9) I will never forget how Joe was playing football with me and his son Ryan

8) Joe had 2 children 1) Lauren Who was 14 at the time, and Ryan who was 8 at the time.

2) 9/11 was a result of al-Qaeda's attacks. The terrorists hijacked 4 airlines, Flight 93 (United 93), Flight 11, Flight 175, and flight 77.

3) Flight 11 crashed into the North tower at 8:45 - 8:50 the tower fell at 10:28

Hawk 31 - During WeJay 03/09/2012

Ask Eve

This will be an advice column

Dear Eve, My boyfriend broke up with me for my best friend, and all 3 of us go to school together, and everyday I always see them hugging, and kissing and it makes me sick, what do I do?

Love sick

Dear love sick, I'm sorry that your boyfriend broke up with you and is now going out with your best friend, but here is the answer 2 your question, all you do is cry in your pillow, eat chocolate from a heart shaped box, and watch a chick flick, then call up your best friend and talk to ~~them~~ Des about how you feel. Don't let your bad feelings drag you down for too long, its important to pick yourself up and move on, try to ignore your old boyfriend and his new girl.

Love, yours truly
Eve

Dear Eve I have this crush on a boy but I don't know if he has a crush on me too, how do I find out if he likes me, I want him to ask me out but I don't know if he likes me the same way that I like him, what do I do?

Scared girl

Dear scared girl, having a crush on a guy is no big deal, ~~but here is the answer to your question~~ I have a crush on this guy in my school, go up to the guy and ask him to hang out with you but its not a date, your just hanging out, ask him to go to the mall or somewhere you two feel safe, and then just walk and talk, like ask him what are his interest's and or his hobbies, and if he feels comfortable enough to tell you then you too will become friends and if he asks you out then, go for it you don't know if he could be the one.

Love, yours truly
Eve

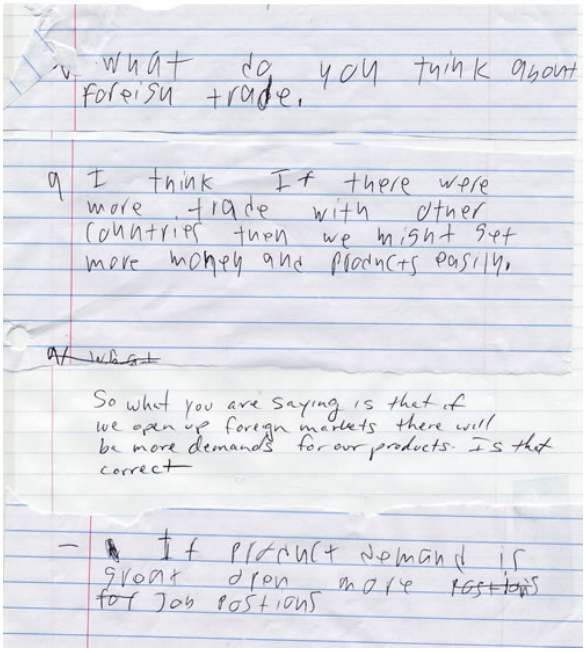
Hawk 7 - During WeJay 03/02/2012 - 1 of 3

Today we will be comparing 3 different genres with 9 bands in total three of them each will be in the three different categories.
The first genre we will discuss is the category of what I call Light.

The first band we will take a listen to is an alternative band known as Atlas&I Originally from England, with their single "we'll never make it to Alaska" Lets take a listen
Now the one thing I find different about this band is the use of Guitar keys and vocals and how smooth the song flows, Another thing I like is the way they blended the keys in there so well, Also I find the singers voice so different from different types of alternative bands.

The next band we will listen to is another alternative band known as Panic! At the disco with their song "time to dance"
Now this band is quite different from atlas&I by having more of a lighter but more upbeat song, Also the singer has a great voice and range.

Hawk 18 - During WeJay 02/14/2012 - 4 of 5



Hawk 8 - During WeJay Artifact - 1 of 3

The **popularity of Bowling Shirts, shoes and apparel** has once again **surged in the current decade**, with Bowling now becoming a past time amongst your average bowling fan, and fashionistas of the **Hollywood "in" crowd**.

Even certain **Food Network hosts such as Guy Fieri** appear in the latest and greatest **Bowling Shirt Fashions** weekly on his **Diners, Drive Ins and Dives** show.

Just proves the old saying that "***everything Old is New again***"!

I've seen around my building shirts that look like they have The garden state parkway with a black background with two stripes on each side of the shirt with lane stripes in the middle of them, and I say the buttons are the trees.

Another shirt was a black background and white panels on each side. I call this the sidewalk shirt.

Then of course there is a shirt dedicated to the most curvy road in America, Lombard st. in San Francisco. It's a black shirt with red zig zag lines going down each side. I call that one, Lombard St.

Another shirt had small squares with white borders covering the entire shirt and made it look like the tiles of a patio. I call it the Lanai.

Hawk 20 - During WeJay - 02/27/2012
android vs. Iphone

Today I will review iphone vs. android

Comparing the Android battery to the iphone an Android is easily removable and replaceable. With an android you can upgrade the battery unlike the iphone which you cannot.

Comparing the apps Android loses to Iphone but there more apps for the android from third party areas. Itunes is the only place to find apps for the Iphone but it seems they are tied comparing them

Notifications android beats iphone since you can pull down a tab and it will display email text social messages. Iphone cannot do that

Internal iphone beats android since the most internal memory you can get for an android 16gbs

Processers android beats iphone depending on the Android phone. Iphone's processer is only 1ghz dual core unlike some android phones that have 1.5ghz dual core making the speed faster than the iphone

External memory android beats iphone since there is a slot for micro sd cards

Dictionary android has one built unlike the iphone which learns as you type.

File transfer/sync android beats Iphone since you can transfer files as if it were an external storage device.

Text editing iphone beats android since many text editing operations such as cut copy and paste unlike android which has very little text operations depending on the app

Charger micro-usb Android beats iphone since all new phones now use it but the iphone uses the apple charger

Hawk 22 - During WeJay Artifact 1 or 3

1) Why do you want to join the marines?
2) how many of your family members are in the marines/Army?
3) why did you choose the marines?
4) What rank do you want to become?
5) What part of the marine Core would you like to be in?

Hawk 19 - During WeJay 2/15/2012

To begin to see how Newton changed our understanding of the Universe we can look at his Three Laws of Motion.

Newton's First Law of Motion:

I. Every object in a state of uniform motion tends to remain in that state of motion unless an external force is applied to it.

This is recognized as essentially Galileo's concept of inertia, and this is often called simply the "Law of Inertia".

Newton's Second Law of Motion:

II. The relationship between an object's mass *m*, its acceleration a, and the applied force *F* is *F = ma*. Acceleration and force are vectors (as indicated by their symbols being displayed in slant bold font); in this law the direction of the force vector is the same as the direction of the acceleration vector.

This is the most powerful of Newton's three Laws, because it allows quantitative calculations of dynamics: how do velocities change when forces are applied.

Notice the fundamental difference between Newton's 2nd Law and the dynamics of Aristotle: according to Newton, a force causes only a *change in velocity* acceleration); it does not maintain the velocity as Aristotle said.

This is sometimes summarized by saying that under Newton, *F = ma*, but under Aristotle *F = mv*, where *v* is the velocity. So, according to Aristotle there is only a velocity if there is a force, but according to Newton an object with a certain velocity maintains that velocity *unless* a force acts on it to cause an acceleration (that is, a change in the velocity).

Aristotle's view seems to be more in grounded in common sense, but that is because of a failure to appreciate the role played by frictional forces. Once we account for *all* forces acting in a given situation it is the dynamics of Galileo and Newton, not of Aristotle, that are found to be correct.

Newton's Third Law of Motion:

III. For every action there is an equal and opposite reaction.

This law is showed by what happens if we step off a boat onto the bank of a lake: as we move in the direction of the shore, the boat tends to move in the opposite direction (leaving us facedown in the water, if we aren't careful!).

1

My name [redacted] A [redacted] and I Love fast food such as Burg King, Subway, Wendy's, Five Guys. My favorite Fast Food Restaurant is Burger King. When I'm at the Drive threw I order A triple bacon Cheese burger with large Coca Cola/sprite with Ice cubes and large fries and 12 chicken fries spicey taste on my tongue and Wolf it fast. It goes mmm into my stomech, and hunger for More and I order 2 cheese burgers for later. I go over and over again on A daily baseis. I also go to subway and get 12 inch philly cheese steaks. I have it toasted with swiss melted cheese with mayo, olives, bacan, cut up steak chunks with medium coke or sprite. My more resent burger joint is Wendy's I eat The triple baconator with cheese + catchup.

Royal Rumble 2012

Royal Rumble 9/10

- The Miz
- Mick Foley
- Ricardo Rodriguez
- Santino Marella
- The great Khali
- Jerry Lawler
- Booker T
- Michael Cole
- Kharma
- Road dogg
- Hacksaw Jim duggan
- Dolph Ziggler
- Sheamus - winner

CM Punk vs Dolph ziggler WWE championship with special guest referee John Laurinaitis.
Winner: CM Punk 8.5/10

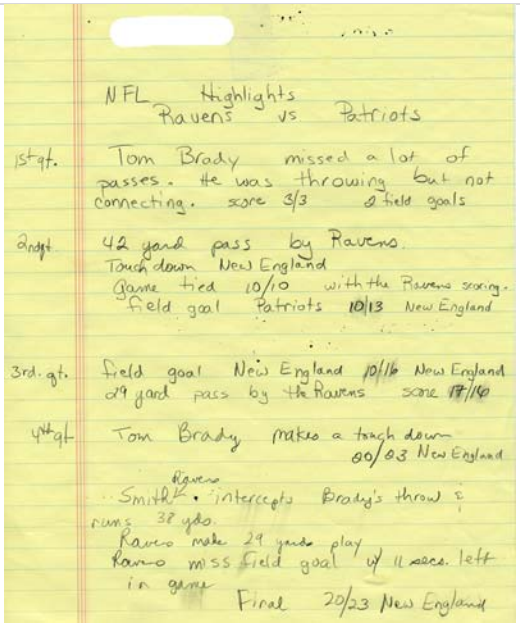
Daniel Bryan vs Mark Henry vs Big Show world heavyweight Championship Winner: Daniel Bryan
7.5/10

John cena vs Kane - Double count out
7.0

4 on 4 Divas Match
Beth Phoenix, Natalya, Nikki Bella, Brie bella vs kelly kelly, eve, Alicia Fox, Tamina
↑ Winners 6.5/10

Drew Mcyntire vs Brodus clay
Winner: Brodus clay
5/10

EVENT: 8/10



NFL Highlights
Ravens vs Patriots

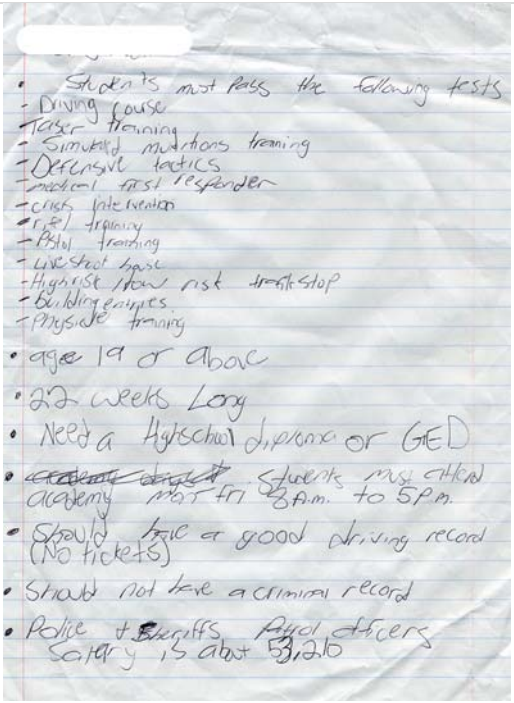
1st qt. Tom Brady missed a lot of passes. He was throwing but not connecting. score 3/3 0 field goals

2nd qt. 42 yard pass by Ravens. Touch down New England Game tied 10/10 with the Ravens scoring. field goal Patriots 10/13 New England

3rd. qt. field goal New England 10/16 New England 29 yard pass by the Ravens score 17/10

4th qt. Tom Brady makes a touch down 20/03 New England

Ravens
Smith K. intercepts Brady's throw & runs 38 yds.
Ravens make 29 yards play
Ravens miss field goal 4 minutes left in game
Final 20/23 New England



- Students must pass the following tests
  - Driving course
  - Taser training
  - Simulated situations training
  - Defensive tactics
  - medical first responder
  - crisis intervention
  - role training
  - Pistol training
  - Live shot house
  - High risk/low risk traffic stop
  - Building entries
  - Physical training
- age 19 or above
- 22 weeks long
- Need a Highschool diploma or GED
- ~~academy staff~~ Students must attend academy Mon-Fri 8 a.m. to 5 p.m.
- Should have a good driving record (No tickets)
- Should not have a criminal record
- Police & Sheriffs Patrol officers salary is about $3,210

Appendix AA: Researcher Observation Journal - Excerpts

SATURDAY, APRIL 7, 2012

Hawk 24's commentary on 911 was self-initiated. He researched and prepared his script with no help from his mentor teacher. H24 grew up next door to Joseph Marchbanks, Jr., a firefighter who lost his life in 911. H24 played with Marchbank's son and knew his daughter and wife. He recalls the events of 911 in a 1 minute 34 second commentary which captures the events of the day and interweaves the story of Marchbanks. This podcast an the writing artifact represent what H24 has taken away from his formal writing instruction -- his ability to organize, summarize, and present a thoughtful account of an event. His artifact is a bulleted list rather than an traditional essay. He uses arrows to reorganize reorder his account. H24 uses longhand rather than the computer to write his copy. I shared this podcast at the TEDXHarlem event as an exemplar of student writing emerging from their personal interests.

Hawk 28 recorded two new podcasts for his WWE series. The first was a pre-Wrestle Mania podcast. H28 insisted that this podcast be posted to SoundCloud before the Sunday event. On Wednesday he returned with **Hawk 27** to podcast his post-Wrestle Mania review. In this podcast the relationship between H27 and H28 continues to reveal the tension between H28 energy and H27 dry, straight guy nature. Several times in this podcast, H27 says "Don't do that," as he becomes annoyed with H28's exuberance. I observed and listened to the interaction as they recorded nearby my computer workstation.

Hawk 35 asked if she could create a podcast after her teacher, a mentor during my study, shared the radio station with her. H35 began to fidget "excitedly" and said that she "loved the Transformers" and wanted to write about the movies. The class had just completed the March issue of the Hawk's Nest Newsletter, so Ms. B. encouraged her to spend some time preparing her "show". H35 pulled up some movie trailers and shared them with Ms. B. She talked about her favorite parts of the movies and recounted the story lines. She stayed in the media lab after class, Ms B. picked up her lunch so that she could continue working. After a brief introduction to Audacity, she was able to record, delete and playback her recordings. She completed the podcast, Transformers, and worked side-by-side with me to edit out her "bloopers".

Today's Recordings
911 Remembered - 3/23/12 - Hawk24
Pre-Wrestle Mania - 3/28/2-12 - Hawk 28
Post-Wrestle Mania - 4/2/2012 - Hawk 27 & Hawk 28
Transformers - 4/2/2012 - (Hawk 35 - new member)

THURSDAY, MARCH 22, 2012

Hawk 14 will recorded **Hawk 10's** research report on the Hippie Movement. **Hawk 20** recorded his "Tips on Taking a Your Driver's Test". He completed four takes before he was satisfied with his recording. This podcast was generated without mentor support. The students are starting to come to me on their own with ideas for new podcasts. **Hawk 24** is research 911 on his own. The script he prepared -- hand written was created in short numbered paragraphs. He renumbered the presentation order after completing the document. While H24 chooses to hand-print his scripts. **Hawk 19** is researching Native Americans roles as iron workers.

Today's Recordings
The Hippie Movement - Hawk 14 Reads Hawk 10's report - includes 60's music selections
Tips on Taking Your Driver's Test - Hawk 20

WEDNESDAY, MARCH 14, 2012

Status 3/12/2012

We are moving into our final days of the During WeJay phase of this research project. I met with staff to review students who have not completed their during WeJay Surveys, list of outstanding Pre-WeJay artifacts, and to schedule our During WeJay open-ended interviews. Four interviews have been scheduled for this Friday.

Hawk 14 will record **Hawk 10's** show (**Hawk 29**, who was going to do the recording, is out for an indefinite period. Absences are common and are another factor in the challenge of working in this environment. Flexibility is a must.)

Staff continue to support student writing in their mentorship roles.

Today's Recordings

World Wide Wrestling - Hawk 27, 28 (5th wrestling show. Hawk 27 is passionate!)

Advice Column - Hawk 13 & 31

Appendix BB: Institutional Review Board (IRB) Approval

SYRACUSE UNIVERSITY
Institutional Review Board
MEMORANDUM

TO: Ruth Small
DATE: September 29, 2011
SUBJECT: **Expedited Protocol Review - Approval of Human Participants**
IRB #: 11-233
TITLE: *Can You Hear Us Now? Investigating the Effects of a Wireless Grid Social Radio Station on Collaboration and Communication in Fragile Populations*

The above referenced protocol, submitted for expedited review, has been evaluated by the Institutional Review Board (IRB) for the following:

1. the rights and welfare of the individual(s) under investigation;
2. appropriate methods to secure informed consent; and
3. risks and potential benefits of the investigation.

Through the University's expedited review process, your protocol was determined to be of no more than minimal risk and has been given **expedited approval.** It is my judgment that your proposal conforms to the University's human participants research policy and its assurance to the Department of Health and Human Services, available at: http://orip.syr.edu/human-research/human-research-irb.html.

Your protocol is approved for implementation and operation from **September 29, 2011** until **September 28, 2012**. If appropriate, attached is the protocol's approved informed consent document, date-stamped with the expiration date. This document is to be used in your informed consent process. If you are using written consent, Federal regulations require that each participant indicate their willingness to participate by signing the informed consent document and be provided with a copy of the signed consent form. Regulations also require that you keep a copy of this document for a minimum of three years.

CHANGES TO APPROVED PROTOCOL: Proposed changes to this protocol during the period for which IRB approval has already been given, cannot be initiated without IRB review and approval, except when such changes are essential to eliminate apparent immediate harm to the participants. Changes in approved research initiated without IRB review and approval to eliminate apparent immediate hazards to the participant must be reported to the IRB within five days. Protocol changes are requested on an amendment application available on the IRB web site; please reference your IRB number and attach any documents that are being amended.

CONTINUATION BEYOND APPROVAL PERIOD: To continue this research project beyond **September 28, 2012**, you must submit a renewal application for review and approval. A renewal reminder will be sent to you approximately 60 days prior to the expiration date. *(If the researcher will be traveling out of the country when the protocol is due to be renewed, please renew the protocol before leaving the country.)*

Office of Research Integrity and Protections
121 Bowne Hall, Syracuse, New York 13244-1200
(Phone) 315.443.3013 ♦ (Fax) 315.443.9889
orip@syr.edu ♦ www.orip.syr.edu

SYRACUSE UNIVERSITY
Institutional Review Board

UNANTICIPATED PROBLEMS INVOLVING RISKS: You must report any unanticipated problems involving risks to subjects or others within 10 working days of occurrence to the IRB at 315.443.3013 or orip@syr.edu.

STUDY COMPLETION: The completion of a study must be reported to the IRB within 14 days.

Thank you for your cooperation in our shared efforts to assure that the rights and welfare of people participating in research are protected.

Kathleen King, Ph.D.
IRB Chair

Note to Faculty Advisor: This notice is only mailed to faculty. If a student is conducting this study, please forward this information to the student researcher.
DEPT: Information Studies – LIS Program, 340 Hinds Hall **STUDENT**: Sarah Chauncey

Office of Research Integrity and Protections
121 Bowne Hall, Syracuse, New York 13244-1200
(Phone) 315.443.3013 ♦ (Fax) 315.443.9889
orip@syr.edu ♦ www.orip.syr.edu

Appendix CC: Institutional Review Board (IRB) Renewal

SYRACUSE UNIVERSITY
Institutional Review Board
MEMORANDUM

TO: Ruth Small
DATE: September 25, 2012
SUBJECT: **Renewal Approval - Expedited Review**
IRB #: 11-233
TITLE: *Can You Hear Us Now? Investigating the Effects of a Wireless Grid Social Radio Station on Collaboration and Communication in Fragile Populations*

The request for renewal of your human subjects protocol has been reviewed by the Institutional Review Board (IRB) and has been evaluated for the following:

1. the rights and welfare of the individual(s) under investigation;
2. appropriate methods to secure informed consent; and
3. risks and potential benefits of the investigation.

Your protocol is approved for implementation and operation for a period of one year, from **September 28, 2012** to **September 27, 2013**. If appropriate, attached is the protocol's approved informed consent document, date-stamped with the expiration date. This document is to be used in your informed consent process. If you are using written consent, Federal regulations require that each participant indicate their willingness to participate by signing the informed consent document and be provided with a copy of the signed consent form. Regulations also require that you keep a copy of this document for a minimum of three years.

CHANGES TO APPROVED PROTOCOL: By its very nature, research involving human participants often requires change in plans and procedures. You are reminded of your responsibility to obtain IRB approval of any changes in your protocol prior to implementing them, except when such change is essential to minimize harm to the participants. Changes in approved research initiated without IRB review and approval to eliminate apparent immediate hazards to the participant must be reported to the IRB within five days. Protocol changes are requested on an amendment application available on the IRB web site; please reference your IRB number and attach any documents that are being amended.

CONTINUATION BEYOND APPROVAL PERIOD: To continue this research project beyond **September 27, 2013**, you must submit a renewal application for review and approval. A renewal reminder will be sent to you approximately 60 days prior to the expiration date. *(If the researcher will be traveling out of the country when the protocol is due to be renewed, please renew the protocol before leaving the country.)*

UNANTICIPATED PROBLEMS INVOLVING RISKS: You must report any unanticipated problems involving risks to subjects or others within 10 working days of occurrence to the IRB at 315.443.3013 or orip@syr.edu.

STUDY COMPLETION: The completion of a study must be reported to the IRB within 14 days.

Office of Research Integrity and Protections
♦ 121 Bowne Hall, Syracuse, New York 13244-1200 ♦
♦ (Phone) 315.443.3013 ♦ (Fax) 315.443.9889 ♦
♦ orip@syr.edu ♦ www.orip.syr.edu ♦

SYRACUSE UNIVERSITY
Institutional Review Board

Thank you for your cooperation in our shared efforts to assure that the rights and welfare of people participating in research are protected.

Kathleen King, Ph.D.
IRB Chair

Note to Faculty Advisor: This notice is only mailed to faculty. If a student is conducting this study, please forward this information to the student researcher.
DEPT: Information Studies – LIS Program, 340 Hinds Hall **STUDENT:** Sarah Chauncey

Office of Research Integrity and Protections
♦ 121 Bowne Hall, Syracuse, New York 13244-1200 ♦
♦ (Phone) 315.443.3013 ♦ (Fax) 315.443.9889 ♦
♦ orip@syr.edu ♦ www.orip.syr.edu ♦

Appendix DD: Log of Consent Forms

Consent Form 1: Participant Consent

Assent Form 1: Student Assent

Notification Form 1: Letter to Parents

Principal Consent Form 1: Letter to Principal

Consent Form 1: Participant Consent

SYRACUSE UNIVERSITY
School of Information Studies

September 30, 2011

Project Title: Can You Hear Us Now? Investigating the Effects of a Wireless Grid Social Radio Station on Collaboration and Communication in Fragile Populations

Dear Educator:

You are invited to participate in the research study cited above conducted by Sarah Chauncey, a doctoral student in the School of Information Studies at Syracuse University.

The purpose of this research is to investigate the potential for wireless grids technologies to serve as a viable infrastructure for student participation in digital social networks. This study specifically investigates how a digital networked environment may be used to positively impact perceived self-efficacy and self-regulation associated with written and oral communication. This study also seeks to understand how a digital networked environment may be used to extend and enhance current methods used by school staff and programs to address cognitive, emotional, and behavioral issues affecting student socialization and learning in a therapeutic high school setting. The wireless grids social networking implementation for this study, a private social radio channel, is designed to motivate and engage students in inquiry based research across the curriculum.

The study involves the following interactions with and data collected by the researcher:

- Individual interviews with the participating teachers and support staff, conducted before any classroom observation and recorded on audio. (approximately 2 hours in duration and conducted at three points over the course of the project)
- Informal interviews with participating teachers and support staff as needed for quick follow-up questions before and after class
- Direct observations in participating classrooms and the media center, with the researcher recording on audio and taking field notes
- Post-observation individual interviews with participating teachers and support staff recorded on audio (approximately 2 hours in duration and conducted at three points over the course of the project)
- Collection of project relevant lesson plans – copied and returned
- Collection of student assent forms and notation of those students who do not want their assignments shared with the researcher
- Collection of student assignments (from students who have given assent) after the teacher and support staff have deleted the names and any other personal identifiers but coded one-to-one identification at different project stages and gender – copied and returned
- A four-part student survey which will be administered at three points during the research process. The survey will be a self-report on general self-efficacy, self-efficacy related to writing, self-regulation related to writing, and self-efficacy related to oral communications. The instrument will be coded such that the same student's responses may be compared across the three administrations. Individual identifiers will be removed.

I and my supervising professor, Dr. Ruth Small, will be the only researchers to view the data. All participants' names will be held confidential, as will the name of the participating school (pseudonyms will be used). Quotations will be credited to pseudonyms or generic students (e.g., an 11th grade boy). No quote will be used that you think misrepresents your actual perceptions and attitudes.

All research information will be password-protected and stored at the Center for Digital Literacy at Syracuse University. Transcripts of the recorded interviews and class sessions will be prepared by graduate students at Syracuse University who have completed the training for ethical treatment of research data. The audio recordings will be stored in a locked drawer, with only the principal investigator, Ruth Small, and the researcher, Sarah Chauncey, allowed access. Once all the analyses have been completed and reports and publications that summarize the data have been distributed, all audio recordings will be destroyed.

During the course of the research and before final publication of my thesis, I will validate my observations and interpretations with you.

In any research, there are potential risks and benefits to participants. Because this is a case study that is looking at the natural environment of the classroom and media center, the researcher will not try to influence the actions or attitudes of the participants. Participants may, however, experience a slight increase in stress when a "stranger" enters your classrooms and library. You may feel that you are being evaluated, even though this research has nothing to do with evaluation. Students may feel unease at the appearance of someone from outside in their classrooms. I am already a known face in the media center. To alleviate these feelings of discomfort, I assure you that my purpose is observation, not evaluation. Nothing that I see or learn will be discussed with other educators, your principal, or anyone in BOCES. You may assure your students that my observations of their actions and conversations will be neither evaluated nor shared, in a manner which identifies individual students. However, we may discuss, generally, opportunities to support students in their work with the social radio station implementation.

The benefits from this research study outweigh the potential risks. You will see a summary of the research results and interpretations, which will provide a reflective lens that could help you improve your practice. The introduction of an innovative technology in the form of a social radio station offers the opportunity for students and staff to participate and communicate in a safe, controlled social networked environment. Insights gained may lead to more varied and effective instructional design decisions.

Recent studies identify gaps in research related to social networking, delineate potential benefits of social network participation, and acknowledge the importance of providing social skills training which address behavioral, communicative and participatory skills required for appropriate interaction in networked digital environments. A study by Yu, Stella, Vogel, and Kwok (2010:1494) found little research related to pedagogical and behavioral issues associated with student participation in social networks. Their study found that online social networking influenced student learning outcomes, social acceptance, and acclimation to university culture.

For students with emotional and behavioral issues, school-based participation in social networking systems presents opportunities for teachers to model social skills, facilitate peer collaboration, provide access to quality content and enlist input from experts in the field. Curriculum related to written and oral communications will benefit from innovative technologies which provide platforms for students to develop participatory and communicative competencies.

Your participation in this research is truly appreciated, but I want to remind you that it is also entirely voluntary. You may refuse to take part in the research or withdraw at any time. You may choose to have particular comments or responses deleted from consideration in the data analysis because you feel they misrepresent your actual beliefs or perceptions.

If you have any questions, concerns, or complaints at any time during the research, you may reach me, Sarah Chauncey, at (845) 627-4757 or schauncey@rboces.org. You may also contact the Syracuse supervising professor, Dr. Ruth Small, at (315) 443-4511 or drruth@syr.edu. If you cannot reach the researchers or wish to contact someone outside of the researchers about your rights as a participant, you may contact the Syracuse Institutional Review Board at (315) 443-3013.

If you have questions, concerns or complaints you wish to address to someone other than the researcher or supervising professor, you may contact the Syracuse Institutional Review Board at (315) 443-3013.

Thank you. I look forward to working with you.

Please sign below to designate your consent to participate in this research study:

_____ I am 18 years of age or older and I wish to participate in this research study.

_____ I agree to be audiotaped and understand that the recordings will be destroyed when the study is complete
_____ I do not agree to be audiotaped

_____ I agree to be interviewed and understand that the recordings will be destroyed when the study is complete
_____ I do not agree to be interviewed

_____ I have received a copy of this consent agreement

_____
p*articipant (Printed name)*

_____ _____
Participant (Signature) *Date*

_____
Witnessed (Printed name)

_____ _____
Witnessed (Signature) *DatE*

Assent Form 1: Student Assent

SYRACUSE UNIVERSITY
School of Information Studies

September 30, 2011

Hello,

My name is Sarah Chauncey. I am a graduate student at Syracuse University investigating the impact of an innovative private social radio station on student writing and oral communication skills. My research investigates the effects of a private wireless grid social radio station, WeJay™, on collaboration and communication.

Your teachers have agreed to allow me to observe in their classrooms and in the media center during one unit of study. Due to staggered curriculum amongst departments and teachers, the study will be conducted over an eight to twelve week timeframe with various groups of participants – students and teachers – actively engaged in using WeJay over the course of this period. I will be sitting at the back of the classroom observing throughout that unit, which I anticipate will be about two weeks. I will introduce an innovative new technology to you and your teachers call "WeJay" a private social radio station and observe during your participation in producing content for the radio station. I will also make an audio recording of the classroom interactions so that I can capture a complete picture of the instruction beyond what I could take down in handwritten notes. I will not use this audio in workshops or presentations. All audiotapes will be destroyed at the completion of the research. I will not participate in the classroom activities.

I will also ask student participants to complete a survey which asks questions about how you feel about your ability to complete your school work, to write, and to speak about what you learn in school. A unique ID will be assigned to each survey, your name will not be included with your responses. The survey will be administered three times over the course of the project.

Any time research is conducted, there are potential risks and benefits. You may be slightly uncomfortable that a "stranger" has entered your classroom to observe. First, you need to know that I will not be there to evaluate anything; I am simply trying to understand typical classroom situations in which students are participating in writing and oral communications. I will not share any of my observations with your teachers or support staff, although I expect to share my final interpretations with them. I will also share information during our use of WeJay™ to ensure that you'll receive the support you need to use this new technology.

Second, I will ask your teachers to share samples of student writing assignments and music compositions, but I will not be shown the names of the students who produced those assignments. I would like to assure you that all the information I collect will not be associated with any student by name. I will not look at any personal information about any student. Even the name of your school and teachers will be changed to pseudonyms.

The potential benefits will be experienced by your teachers and support staff. I hope to understand how an innovative new technology, a private social radio station, can be used to support participation and communication in a safe networked environment. I will share my final conclusions with your teachers and make them available more broadly through my final thesis and later publications.

If you have any questions, concerns, or complaints at any time during the research, you may reach me, Sarah Chauncey, at (845) 627-4757 or schauncey@rboces.org. You may also contact the Syracuse supervising professor, Dr. Ruth Small, at (315) 443-4511 or drruth@syr.edu. If you cannot reach the researchers or wish to contact someone outside of the researchers about your rights as a participant, you may contact the Syracuse Institutional Review Board at (315) 443-3013.

As a part of my research, I would like to collect the assignments that you turn in to your teachers before, during and after your participation with WeJay, because your work will give me a better picture of how this environment impacted your writing, music composition, and oral communications. Your teachers have agreed to take your names off of the assignments before giving me a copy.

Please sign below to indicate whether you agree or do not agree to have your assignments included with the group of assignments made available to the researcher. Whatever choice you make will have no effect on your grades or educational program.

Your participation in this research is voluntary. Below you may indicate your agreement/nonagreement that I may use comments that you make in class (without any personal identification) and your anonymized assignments and survey as data for my research.

If you have questions, concerns or complaints you wish to address to someone other than the researcher or supervising professor, you may contact the Syracuse Institutional Review Board at (315) 443-3013.

Thank you for considering my request. I look forward to visiting your classroom.

_____ I agree to let the researcher see my assignments with my name deleted.

_____ I do not agree to let the researcher see my assignments.

_____ I agree to complete the student survey. The survey will be administered three times over the course of the project. A unique ID, but no name will appear on the survey.

_____ I do not agree to complete the student survey.

_____ I understand that the class sessions during this research study will be audiotaped. I agree to allow the researcher to use my classroom interactions as part of the data for this study, with the assurance that all comments will be anonymous and the tapes will be destroyed when the research is complete.

_____ I agree to be audiotaped.

_____ I do not agree to be audiotaped.

_____ I have received a copy of this Assent Form.

_____ I have received a copy of this Assent Form.

_____
Student (Printed name)

_____ _____
Student (Signature) Date

_____
Researcher (Printed name)

_____ _____
Researcher (Signature) Date

Notification Form 1: Letter to Parents

SYRACUSE UNIVERSITY
School of Information Studies

September 30, 2011

Dear Parent or Guardian,

My name is Sarah Chauncey. I am a graduate student at Syracuse University investigating the impact of an innovative private social radio station on student writing and oral communication skills. I will be observing in your child's classroom and media center during one of the units of study this fall.

I will be sitting at the back of the classroom or media center observing throughout that unit. I will introduce an innovative new technology to students and their teachers called "WeJay™" which is a private social radio station and observe while students and teachers interact to produce content for the radio station. I will also make an audio recording of the classroom interactions so that I can capture a complete picture of the instruction beyond what I could take down in handwritten notes. All audiotapes will be destroyed at the completion of the research. I will not participate in the classroom activities.

I will also ask student participants to complete a survey which asks questions about how they feel about their ability to complete school work, to write, and to speak about what they learn in school. A unique ID will be assigned to each survey, names will not be included with responses. The survey will be administered three times over the course of the project.

Any time research is conducted, there are potential risks and benefits. Your child may be slightly uncomfortable that a "stranger" has entered your classroom to observe. First, you need to know that I will not be there to evaluate anything; I am simply trying to understand typical classroom situations in which students are participating in writing and oral communications. I will not share any of my observations with your child's teachers or support staff, although I expect to share my final interpretations with them. I will also share information during our use of WeJay™ to ensure that students and staff receive the support they need to use this new technology.

Second, I will ask your child's teachers to share samples of student writing assignments and music compositions, but I will not be shown the names of the students who produced those assignments. I would like to assure you that all the information I collect will not be associated with any student by name. I will not look at any personal information about any student. Even the name of your school and teachers will be changed to pseudonyms.

The potential benefits will be experienced by your teachers and support staff. I hope to understand how an innovative new technology, a private social radio station, can be used to support participation and communication in a safe networked environment. I will share my final conclusions with your teachers and make them available more broadly through my final thesis and later publications.

If you have any questions, concerns, or complaints at any time during the research, you may reach me, Sarah Chauncey, at (845) 627-4757 or schauncey@rboces.org. You may also contact the Syracuse supervising professor, Dr. Ruth Small, at (315) 443-4511 or drruth@syr.edu. If you cannot reach the researchers or wish to contact someone outside of the researchers about your rights as a participant, you may contact the Syracuse Institutional Review Board at (315) 443-3013.

Your child's participation is entirely voluntary. If for any reason you do not want your child to participate in this study, please call Sarah Chauncey, at (845) 627-4757. She will be happy to provide you with any additional information. Your decision will NOT affect your child's grades or educational program.

If you have questions, concerns or complaints you wish to address to someone other than the researcher or supervising professor, you may contact the Syracuse Institutional Review Board at (315) 443-3013.

_____

Researcher (Printed name)

_____ _____

Researcher (Signature) *Date*

Principal Consent Form 1: Letter to Principal

SYRACUSE UNIVERSITY
School of Information Studies

September 30, 2011

Project Title: Can You Hear Us Now? Investigating the Effects of a Wireless Grid Social Radio Station on Collaboration and Communication in Fragile Populations

Dear Principal:

Your school has been invited to participate in the research study cited above conducted by Sarah Chauncey, a doctoral student in the School of Information Studies at Syracuse University.

The purpose of this research is to investigate the potential for wireless grids technologies to serve as a viable infrastructure for student participation in digital social networks. This study specifically investigates how a digital networked environment may be used to positively impact perceived self-efficacy and self-regulation associated with written and oral communication. This study also seeks to understand how a digital networked environment may be used to extend and enhance current methods used by school staff and programs to address cognitive, emotional, and behavioral issues affecting student socialization and learning in a therapeutic high school setting. The wireless grids social networking implementation for this study, a private social radio channel, is designed to motivate and engage students in inquiry based research across the curriculum.

The study involves the following interactions and data collection by the researcher:

- Individual interviews with the participating teachers and support staff, conducted before any classroom observation and recorded on audio. (approximately 2 hours in duration and conducted at three points over the course of the project)
- Informal interviews with participating teachers and support staff as needed for quick follow-up questions before and after class
- Direct observations in participating classrooms and the media center, with the researcher recording on audio and taking field notes
- Post-observation individual interviews with participating teachers and support staff recorded on audio (approximately 2 hours in duration and conducted at three points over the course of the project)
- Collection of project relevant lesson plans – copied and returned
- Collection of student assent forms and notation of those students who do not want their assignments shared with the researcher
- Collection of student assignments (from students who have given assent) after the teacher and support staff have deleted the names and any other personal identifiers but coded one-to-one identification at different project stages including gender – copied and returned
- A four-part student survey which will be administered at three points during the research process. The survey will be a self-report on general self-efficacy, self-efficacy related to writing, self-regulation related to writing, and self-efficacy related to oral communications. The instrument will be coded such that the same student's responses may be compared across the three administrations. Individual identifiers will be removed.

I and my supervising professor, Dr. Ruth Small, will be the only researchers to view the data. All participants' names will be held confidential, as will the name of the participating school (pseudonyms will be used).

Quotations will be credited to pseudonyms or generic students (e.g., an 11th grade boy). No quote will be used that you think misrepresents your actual perceptions and attitudes.

All research information will be password-protected and stored at the Center for Digital Literacy at Syracuse University. Transcripts of the recorded interviews and class sessions will be prepared by graduate students at Syracuse University who have completed the training for ethical treatment of research data. The audio recordings will be stored in a locked drawer, with only the principal investigator, Ruth Small, and the researcher, Sarah Chauncey, allowed access. Once all the analyses have been completed and reports and publications that summarize the data have been produced, all audio recordings will be destroyed.

During the course of the research and before final publication of my thesis, I will validate my observations and interpretations with you.

In any research, there are potential risks and benefits to participants. Because this is a study that is looking at the natural environment of the classroom and media center, the researcher will not try to influence the actions or attitudes of the participants. Participants may, however, experience a slight increase in stress when a "stranger" enters the classrooms and media center. Students may feel they are being evaluated, even though this research has nothing to do with evaluation. Students may feel unease at the appearance of someone from outside in their classrooms. I am already a known face in the media center. To alleviate these feelings of discomfort, I assure you that my purpose is observation, not evaluation. Nothing that I see or learn will be discussed with other educators or anyone in BOCES. You may assure your students that my observations of their actions and conversations will be neither evaluated nor shared, in a manner which identifies individual students. However, we may discuss, generally, opportunities to support students in their work with the social radio station implementation.

The benefits from this research study outweigh the potential risks. You will see a summary of the research results and interpretations, which will provide a reflective lens that could help your staff improve their practice. The introduction of an innovative technology in the form of a social radio station offers the opportunity for students and staff to participate and communicate in a safe, controlled social networked environment. Insights gained may lead to more varied and effective instructional design decisions.

Recent studies identify gaps in research related to social networking, delineate potential benefits of social network participation, and acknowledge the importance of providing social skills training which address behavioral, communicative and participatory skills required for appropriate interaction in networked digital environments. There is little research related to pedagogical and behavioral issues associated with student participation in social networks. These studies found that online social networking influenced student learning outcomes, social acceptance, and acclimation to university culture. For students with emotional and behavioral issues, school-based participation in social networking systems presents opportunities for teachers to model social skills, facilitate peer collaboration, provide access to quality content and enlist input from experts in the field. Curriculum related to written and oral communications will benefit from innovative technologies which provide platforms for students to develop participatory and communicative competencies.

Participation in this research is truly appreciated, but I want to remind you that staff and student participation is also entirely voluntary. Staff and students may refuse to take part in the research or withdraw at any time. Participants may also choose to have particular comments or responses deleted from consideration in the data analysis because they feel this information misrepresents their actual beliefs or perceptions.

If you have any questions, concerns, or complaints at any time during the research, you may reach me, Sarah Chauncey, at (845) 627-4757 or schauncey@rboces.org. You may also contact the Syracuse supervising professor, Dr. Ruth Small, at (315) 443-4511 or drruth@syr.edu. If you cannot reach the researchers or wish to contact someone outside of the researchers about the rights of participants, you may contact the Syracuse Institutional Review Board at (315) 443-3013.

If you have questions, concerns or complaints you wish to address to someone other than the researcher or supervising professor, you may contact the Syracuse Institutional Review Board at (315) 443-3013.

Thank you. I look forward to working with your staff and students.

Please sign below to designate your consent to participate in this research study:

_____ I have received a copy of this Principal Consent Form.

_____
Principal (Printed name)

_____ _____
Participant (Signature) *Date*

_____
Witnessed (Printed name)

_____ _____
Witnessed (Signature) *Date*

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