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# Social Networking: Closing the Achievement Gap Between Regular and Special Education Students

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Social Networking: Closing the Achievement Gap  
Between Regular and Special Education Students

by  
Steven E. Gregor

An Applied Dissertation Submitted to the  
Abraham S. Fischler School of Education  
in Partial Fulfillment of the Requirements  
for the Degree of Doctor of Education

Nova Southeastern University  
2014

### Approval Page

This applied dissertation was submitted by Steven E. Gregor under the direction of the persons listed below. It was submitted to the Fischler School of Education and Human Services and approved in partial fulfillment of the requirements for the degree of Doctor of Education at Nova Southeastern University.

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## Statement of Original Work

I declare the following:

I have read the Code of Student Conduct and Academic Responsibility as described in the *Student Handbook* of Nova Southeastern University. This applied dissertation represents my original work, except where I have acknowledged the ideas, words, or material of other authors.

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Date

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## **Abstract**

Social Networking: Closing the Achievement Gap Between Regular and Special Education Students. Steven E. Gregor, 2014: Applied Dissertation, Nova Southeastern University, Abraham S. Fischler School of Education. ERIC Descriptors: Achievement Gap, Social Networks, Special Education, Academic Achievement

This applied dissertation was designed to analyze the effects of social networking for educational purposes on the academic achievement of regular and special education students in the secondary school setting. The effect of social networking on student learning has not been determined. There is a limited amount of research on how and to what extent teachers use social networking within the parameters of instruction. There is even less research distinguishing the effects of social networking on the academic achievement on regular and special education students.

The student participants engaged in discussion forums as their primary social networking experience. Of the 155 participants, 94 were enrolled in a class that required participation in asynchronous discussion forum, and 61 were enrolled in a class with more traditional instruction devoid of social networking. The treatment consisted of 12 discussion prompts created by the teacher in the Blackboard course management system.

The analysis of student test data showed no significant difference in mean scores attributable to social networking when educational status was ignored. When educational status was not ignored, however, the significant difference of mean scores between all regular education and all special education students was found to be highly unlikely to have been due to chance. This study also found that there was an interaction between educational status and social networking. The infusion of educational social networking helped narrow the achievement gap between regular and special education students.

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## **Chapter 1: Introduction**

With special education subgroups persistently failing to meet performance targets (Sherman, 2009), the achievement gap between special needs students and their regular education peers is receiving much attention. According to Eckes and Swando (2009), who investigated the impact of the No Child Left Behind Act of 2001 (NCLB) accountability model on the Individuals with Disabilities Education Act, schools fail to make adequate yearly progress most often because of the students-with-disabilities subgroup. Research conducted by the Center on Education Policy (as cited in Sherman, 2009) showed that students with special needs continue to lag behind their regular education peers in language arts literacy and mathematics. NCLB constraints have begun to wane as the U.S. Department of Education (2012c) has invited state educational agencies to request flexibility to better focus on the improvement of student learning and the quality of instruction. Once these requests have been granted, specific requirements of NCLB can be exchanged for “rigorous and comprehensive State-developed plans designed to improve educational outcomes for all students, close achievement gaps, increase equity, and improve the quality of instruction” (U.S. Department of Education, 2012a, para. 1). Receipt of the waiver means that states migrate from a model in which annual progress is made toward an arbitrary benchmark to a continuous growth model for all subgroups.

This study investigated the relationship between social networking and academic achievement. The achievement of regular and special education students were compared with and without the experience of social networking as part of the instructional process.

### **The Research Problem**

The persistent achievement gap between special and regular education students

poses a formidable challenge for schools struggling to improve learning for all students. This impending crisis of more and more schools moving into *needs improvement* status demanded immediate action. The interactive and engaging nature of social networking, manifested in online learning environments, wikis, blogs, and other Web 2.0 tools, may improve students' academic achievement (McLoughlin & Lee, 2007). Klamma et al. (2007) ascertained that "emergent new Web 2.0 . . . concepts and technologies are opening doors for more effective learning and have the potential to support lifelong competence development" (p. 72). The recent proliferation of social networking warrants further investigation into its potential impact on student achievement.

### **Theoretical Framework**

The social cognitive theory suggests that people construct new learning from social influences (Bandura, 1977). Serving as the bridge between behaviorist and cognitive learning theories, the social cognitive theory thrives on the advent of new technologies. Bandura (1989) stated, "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 of technology" (pp. 5-6).

The profound impact of technology on human experience may offer new methods to create social environments that facilitate learning. Technology enhances the ability to interact with and observe others. For Bandura (1989), "Human expectations, beliefs, emotional bents and cognitive competencies are developed and modified by social influences that convey information and activate emotional reactions through modeling, instruction and social persuasion" (p. 3). Students who participate in social media for instructional purposes are influenced by those media. Observational learning facilitated

by social media in course management systems (CMS) may have a relationship with student achievement. Social media can provide the building blocks for a learning environment powered by multiple forms of support, allowing learners to connect, interact, and share ideas in a fluid way. For McLoughlin and Lee (2007), learning is “conversational in nature, and . . . it necessitates a social dimension, including communication, dialogue and shared activity” (p. 671).

### **Background and Justification**

Although NCLB is being eclipsed by state-generated test protocols (U.S. Department of Education, 2012b), its identification of four subgroups for which schools must report performance on standardized tests is still useful. Those designations include (a) race/ethnicity, (b) socioeconomic status, (c) limited English proficiency, and (d) students with disabilities (NCLB, 2002). The special education subgroup’s failure to make adequate yearly progress occurs primarily because the students with disabilities are expected to maintain the same proficiency levels as their regular education peers. This standard has proven problematic because special education students often start out with lower average test scores, making it difficult to compete with their more advantaged counterparts. One of the first researchers to use the term “achievement gap,” Kozol (1991) described this disparity in student performance as “savage inequalities” (p. 222) in America’s schools. Lavin-Loucks (2006) speculated that the term may have been coined for its mollifying effect on the discussion of “pervasive racial and socioeconomic disparities in student achievement” (p. 2). Although the impact of societal inequities of subgroups on student achievement may be great, the solutions remain elusive. While policymakers explore those solutions, educators may need to take immediate action to equalize academic opportunities for all students.

Educators have long recognized academic achievement as one of the strongest predictors of whether students will graduate from high school (Battin-Pearson et al., 2000). Supporting students' motivation and persistence to engage in learning becomes a premier goal in itself. The predominance of social networking in the digital lives of almost all students with or without disabilities underscores the need to investigate whether the integration of social networking in education can narrow the achievement gap (National School Boards Association, 2007).

### **Deficiencies in the Evidence**

Despite the ubiquity of Web 2.0 in the lives of today's students, educators face impediments in infusing social networking tools into instruction. Several prominent cases of impropriety between teachers and students using sites like MySpace and Facebook have created some skepticism about the validity of their use for education (Manzo, 2009). Furthermore, most schools have rules against accessing social networking sites using the school's technology resources (National School Boards Association, 2007). Such hindrances complicate the efforts of educators to experiment with Web 2.0 tools for the purposes of instruction. All of these factors pose impediments to researchers.

Allied with the U.S. Department of Education, the Partnership for 21st Century Skills (2012) advocated the infusion of critical thinking, problem solving, communication, collaboration, creativity, and innovation into the education of every learner. This national educational mission warrants more correlational study to ascertain the impact of the educational use of Web 2.0 technologies on student achievement and narrowing achievement gaps, despite the fact that after Clark's (1994) review of 70 years of research, he concluded that no studies have produced "compelling causal evidence that media or media attributes influence learning in any essential and structural way" (p. 27).

Viewing instructional media as vehicles of instruction, Clark (2001) asserted that although the choice of media might influence the cost or extent of delivering instruction, “only the content of the vehicle can influence achievement” (p. 2). He further contended that effectively delivered content will increase student achievement regardless of the medium. Content that is effectively delivered through social networking may have the same impact. For example, in a study conducted by Scribner (2007) in which 202 students took an online course, the participants reported that “social networking areas of an online course were important for engaging their motivation to learn and for supporting their motivation to persist in learning” (p. 3).

### **Audience**

Researchers suggested that there is a clear link between student motivation and engagement in learning (Board on Children, Youth and Families, 2003; Driscoll, 2005). Researchers have also found that a high level of interaction between peers and between teachers and students resulted in greater student satisfaction (Board on Children, Youth and Families, 2003; Klem & Connell, 2004). The application of social networking for instructional purposes may have the potential to close the achievement gap between regular and special education students. It is expected, however, that all students’ achievement will improve, although at different rates. For example, the infusion of blogs, online learning environments, and synchronous distance learning may increase engagement in learning for all. Maximal benefits, however, may be experienced by special education students, as they often start at lower levels of achievement (Eckes & Swando, 2009).

### **Definition of Terms**

*Academic achievement* is “the rate of learning over specific time periods” (Rivkin,

Hanushek, & Kain, 2005, p. 422). In this study, academic achievement refers to students' individual learning measurements during a specific academic semester.

An *achievement gap* is the “disparity in academic performance between groups of students” (*Education Week*, 2004, para. 1). NCLB (2002) classifies students with special needs as a subgroup vulnerable to the achievement gap.

*AYP* is established by statewide accountability systems in which proficiency goals are based on assessment data beginning in the 2001-02 school year. Each state must progressively increase its benchmarks to reflect 100% proficiency for all students by 2013-14. Increases in proficiency rates must occur for a school to make AYP (U.S. Department of Education, 2002a).

*CMS* provide instructors with a virtual space that is available only to their students. This web space can include digital files, activities, web links, or discussion forums. CMS have become the primary form of delivering online content in distance education classes and are used to supplement in-person classes as well (Smith, 2009).

*Digital citizenship* can be defined as “the norms of behavior with regard to technology use” (Ribble, Bailey, & Ross, 2004, p. 7).

*Social networking sites* (SNS) are defined as Web-based services that allow individuals to (a) construct a public or semipublic profile within a bounded system, (b) compile a list of other users with whom they share a connection, and (c) view and traverse their list of connections and those made by others within the system. The properties and nomenclature of these connections may vary from site to site (Smith, 2009).

Children are deemed to have *special needs* if they do not achieve adequately for their age or meet state-approved grade-level standards in one or more of the following

areas, when provided with learning experiences and instruction appropriate for the child's age or state-approved grade-level standards: (a) oral expression, (b) listening comprehension, (c) written expression, (d) basic reading skills, (e) reading fluency skills, (f) reading comprehension, (g) mathematics calculation, and (h) mathematics problem solving (Individuals with Disabilities Education Act, 2004).

### **Purpose of the Study**

The purpose of this study was to examine whether the infusion of social networking had an impact on narrowing the achievement gap between special and regular education students. This study also examined the effectiveness of social networking manifested in online learning environments, wikis, blogs, and other Web 2.0 tools-in improving learning for secondary education students. Implications for instructional design were also derived from the research results.

### **Summary**

Chapter 1 introduced the problem of a gap in achievement between regular and special education students and the challenge to lessen that gap by introducing social networking as treatment. Definitions of terms important to understanding the variables in the study were presented, as well as the purpose of the study, to determine the impact of social networking as a treatment to improve student achievement. Chapter 2 presents a review of the literature relevant to educational technology, social media, and social networking.

## **Chapter 2: Literature Review**

Chapter 1 introduced the research problem, the setting and context of the study, the purpose, and definitions important to the understanding of the topic and problem. Chapter 2 reviews the literature that examines the impact of social networking on learning. The path to understanding learning has been labyrinthine as scientists developed divergent theories that at times overlapped. In the late 19th century, functionalists such as Dewey had followed an introspective approach to explain human learning (Ormrod, 2012). Although he warned against unscientific means of thinking, Dewey, a philosopher, developed a comprehensive theoretical system that included everything from learning to ethics to logic (Saettler, 2004). By the early 1900s, however, some psychologists began to criticize this approach (Ormrod, 2012). Shifting the focus to observable changes in behavior as a natural response to environmental stimuli, behaviorists held that mental processes cannot be measured. Cognitivists, however, asserted that learning emanated from the mind, emphasizing internal mental structures (Ertmer & Newby, 1993). By the 1940s, some psychologists proposed that people can also learn a new behavior merely by watching and imitating what others do (Miller & Dollard, 1941). Researchers and scientists began to reach a consensus that the study of behaviorism alone could not explain the multifaceted aspects of human learning (Ormrod, 2012).

### **Social Cognitive Learning Theory**

Although his social learning theory incorporated elements of behaviorism, Bandura (as cited in Ertmer & Newby, 1993) eventually saw the limitations of focusing on only the experimental variables that can be observed, measured, and manipulated. Promoting the study of how learning occurs through observation and imitation, Bandura (1977) posited that both environmental and cognitive factors, or mental structures,



influenced the behavior of humans. Stressing the importance of observing and imitating the behaviors, attitudes, and emotional reactions of others, Bandura (1977) argued that learning would be incredibly tedious and even unsafe if people had to rely exclusively on the effects of their own actions to figure out what to do in particular situations.

Bandura's work has been applied to the study of aggression and psychological disorders (Kearsley, 2012) and has been widely used in designing training programs. His theory stressed the role of the teacher as a model as learning about the consequences of others' actions can have an impact on one's choices. For example, the breaking down of a task into small steps is the preferred method for a behaviorist who is trying to find the most efficient and failproof method of shaping a learner's behavior. The cognitive scientist, however, would analyze a task, break it down into smaller steps or chunks, and use that information to develop instruction that moves from simple to complex, building on prior schema (Bandura, 1997).

Bandura's social learning theory explained human behavior as a series of ongoing reciprocal interactions among cognitive, behavioral, and environmental influences (Kearsley, 2012). A new behavior can be learned simply by observing others doing it (Bandura, 1977, 1986; Rosenthal, Alford, & Rasp, 1972). Four important steps in observational learning underpin Bandura's theory. Described by Ormrod (2012) as procedural knowledge, these steps occur outside the influences of rewards and punishment and are more closely related to performance than to the acquisition of knowledge. First, Bandura described attention processes, including characteristics of the model that may increase the likelihood of success. Second, the depth of retention processes influence symbolic coding, schematic organization, and rehearsal of what was observed. The third step involves reproduction processes, including the ability of the

observer to perform the behavior being observed. Finally, the fourth step involves motivational processes that enable the observer to repeat the behavior.

The first component of observational learning, attention, represents individuals' inability to learn much by observation unless they "attend to, and perceive accurately, the significant features of the modeled behavior" (Bandura, 1977, p. 24). For example, in Bandura's study of aggression, children who attended to what the aggressor was doing and saying were able to reproduce the model's behavior (Allen & Santrock, 1993, p. 139). Attentional processes determine what is selectively observed and what is retained from observation of the model (Bandura, 1977). Bandura also argued that in any social setting, some models wield more influence or command more than others. The functional value of models' behaviors is "highly influential in determining which models people will observe and which they will disregard" (Bandura, 1977, p. 24). Predating the era of social media, television and other forms of mass media presented opportunities for people to observe models who were effective in captivating attention, negating the need for any special incentives to do so (Bandura, Grusec, & Menlove, 1966).

Retention is the next component of social cognitive theory. In order to reproduce the modeled behavior, individuals must encode the information into long-term memory for later retrieval. In order to benefit from behavior observed by effective models that are no longer present to provide direction, the desired behavior must be represented in memory in symbolic form (Bandura, 1977). Allen and Santrock (1993) described a simple verbal description of what the model performed as memory retention. Transitory modeling experiences can be saved in long-term memory through the medium of symbols. For Bandura (1977), it is the "advanced capacity for symbolization that enables humans to learn much of their behavior by observation" (p. 25). He also asserted that

observational learning depends primarily on two representational systems.

Imaginal, the first representation system, enables the observer to act upon sensory stimulation that creates perceptions of the external experiences or events. For example, observing a dancer enables the observer to encode the mental images for later retrieval. Repeated exposure to modeling stimuli produces long-term images of the modeled performances. This enables the learner to later retrieve these images of physically absent events. Over time, it becomes impossible to hear the name of a model without conjuring up a mental image (Bandura, 1989). The second representational system involves verbal coding of modeled events and performances. Bandura (1977) believed that most human cognitive processes are regulated by verbal cues, not imaginal. Verbal representation enables humans to store huge repositories in simplified form, facilitating observational learning and retention.

After modeled performances have been translated into imaginal or verbal symbols, these memory codes guide observers' future performance. Observers who create these schema are more adept at acquiring new behavioral patterns and retaining them than those who do not attend to the model's behavior or simply do not form their own imagery or verbal representations. The importance of this proposition has been observed in studies involving children (Bandura et al., 1966; Coates & Hartup, 1969), as well as in adults (Bandura & Jeffery, 1973; Bandura, Jeffery, & Bachicha, 1974).

Motor reproduction is the third process in observational learning. During this process, the observer must reproduce the model's behavior by converting symbolic representations into actions (Bandura, 1977). Understanding motor reproduction response requires analysis of the "ideomotor mechanisms of performance" (p. 27), where the behavioral reproduction is accomplished by aligning the observer's spatial actions with

those of the model. Behavioral reproduction or enactment can be categorized as cognitive organization of responses, their initiation, monitoring, and refinement on the basis of informative feedback.

In the first phase of behavioral enactment, learners select and organize their responses based on their ability to perform the component skills. The amount of observational learning that will be imitated behaviorally depends upon the availability of the component skills. Learners who possess these skills with a high level of competence can more easily synthesize them into the new behavior patterns. If learners overcome the initial impediments to observational learning, Bandura (1977) said there are other hindrances in the process of behavioral reproduction.

Observers rarely carry out newly modeled behaviors without error. Bandura (1977) indicated that “accurate matches are usually achieved by corrective adjustments of preliminary efforts” (p. 28). He further posited that learners’ symbolic imaginal or verbal representations of modeled behaviors do not always translate into accurate imitations of modeled behavior, serving as “cues for corrective action” (p. 28). Given the complexity of certain patterns of behavior, some behaviors, such as swimming, can never be completely learned solely through observation. Because it is impossible for performers to observe every kinesthetic component of their own behavior, informative feedback about their performance is often supplied by other observers of the behavior. In the case of athletes and coaches, valuable feedback about performance helps the athletes refine their approximation of the new behavior learned by modeling. The complement of the observational learning and the feedback received by observers helps learners to focus on segments of the behavior pattern that have only been partially learned (Bandura, 1977).

Motivation is the final process in observational learning. Because not all new

learning is demonstrated in an overt fashion, Bandura (1977) made a distinction between acquisition and performance. Observers are more likely to perform the modeled behavior if it results in a pleasurable outcome as opposed to one that has aversive consequences. During the motivational process, observers expect to receive positive reinforcements for the modeled behavior. Therefore, they perform the same act to achieve the rewards. The same regulatory actions individuals exercise to monitor their own behavior also regulate which observationally learned responses will be performed (Hicks, 1971). For example, when individuals, especially children, witness mass media, they attend, code, retrieve, and activate the motor capabilities and perform the modeled behavior because of the positive reinforcement mediated (Bootzin, Bower, & Crocker, 1991).

Social cognitive theorists measure learning by mental changes, not behavioral changes. Bandura (1977) described how people, through observation, can describe new learning even though they have never experienced or performed it. Unlike the behaviorists who posit that biology plays little to no role in the measures of learning, Bandura (1977) stressed that certain cognitive processes must be in place before learning can occur. These processes include attention, rehearsing, and the creation of mental representations. He also asserted that in contrast to the tenets of behaviorism, reinforcement and punishment have little effect on learning unless the observer is aware of the contingencies between response and consequences. Finally, observers are far more likely to perform new behaviors or acquire new knowledge if they expect certain response-consequence contingencies to exist.

Although Bandura (1977) recognized the influences of the environment on learning, he hypothesized that outside stimuli and biological drives were not sufficient to explain how learning occurs. He suggested that learning was also influenced by a broad

social context wherein a unique dynamic existed between the observer and the model.

### **Social Learning in the Virtual Environment**

Bandura (1977) described learning as a vicarious social activity that is not merely imitative but observational as well. Emphasizing how humans influence humans, Bandura posited 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). Conte and Paolucci (2001) defined social learning as “a process of learning caused or favored by people being situated in a common environment and observing one another” (para. 5.2). This common environment enables the learners to not only perceive each other for comparison and self-evaluation but also to see others as “a neutral source of information, which may help or speed several forms of instrumental learning” (para. 5.2). Social learning then becomes the phenomenon that empowers given learners or learning agents to update their own knowledge base. Updates may include adding to or erasing given information, or modifying an existing representation “by perceiving the positive or negative effects of any given event undergone or actively produced by another agent on a state of the world which the learning agent has as a goal” (para. 5.2).

As an example of a common environment in which social learning takes place, the virtual environment of social networking empowers users to chat, organize events, exchange ideas, share photographs, make announcements, and meet new friends (Adamic, Buyukkokten, & Adar, 2003; Conte & Paolucci, 2001). By building these social media connections, users are able to transform their environments and restructure the functional systems in which social learning occurs (Vygotsky, 1978; Wartofsky, 1983). The social networking features of Web 2.0 and CMS that have empowered users

to alter their learning environments are not just technical implementations (Lewis, Pea, & Rosen, 2010) but represent “the frameworks of participation and sharing they enable, structure, and call upon us to enact” (Jenkins, 2009). In operation, Web 2.0 has invented new ways for its users to participate in political, institutional, and social endeavors.

A recent release of the Pew Research Center’s (2012) Global Attitudes Project revealed that lower income nations are participating in social networking as robustly as their more advantaged counterparts. Cell phones have become nearly ubiquitous and are used to make social connections in a variety of ways, including sharing pictures and sending text messages. Nearly half of the populations of the United States, Great Britain, and Japan now own smart phones, increasing users’ abilities to visit social networking sites and obtain political and economic information. Pew also found that college graduates under 30 years of age are the most likely to use these social media.

Based on its public opinion surveys, the Pew Research Center’s (2012) Global Attitudes Project cited 12 countries in which at least 6 of every 10 smart phone users access social networks with their phones. This level of usage is common in Egypt (79%), Mexico (74%), and Greece (72%). The Japanese, however, at 45% and Chinese at 31% are the least likely to use their phones for social networking purposes.

### **Social Networking and Education**

Prensky (2005) referred to today’s digital learners as “native speakers of technology, fluent in the digital language of computers, video games, and the Internet” (para. 4). Despite these learners’ facility with Web 2.0, many educators have trepidations about infusing social networking tools into instruction. Concerns over security and inappropriate conduct have prompted many school districts to develop restrictive policies in the use of social media. In fact, most schools have rules against social networking

(National School Boards Association, 2007). More than 9 in 10 districts, or 92%, require parents or students (or both) to sign an Internet user policy that places restrictions on social networking. More than 8 in 10 districts prohibit online chat rooms and instant messaging. More than half of all districts prohibit any form of social networking in a school (National School Boards Association, 2007). Such hindrances complicate the efforts of educators to experiment with social networking supported by Web 2.0.

Jenkins (2009) emphasized the role literacies embedded in social media play in a participatory culture, suggesting that the mission of educators may be to strategically plan to use social media for learning. Asserting that the management and navigation of social and participatory media embody the core of these skills, Jenkins proposed that these skills coincide with today's basic life skills. Clark (1994) specified that although "there is no single media attribute that serves a unique cognitive effect . . . there is strong evidence that many very different media attributes accomplish the same learning goal" (p. 22). If media attributes are proxies for some other variables that are instrumental in learning gains (Clark, 1994), more research on the impact of the educational use of social networking on student achievement may be warranted given the demand for greater student engagement, group collaboration, and group problem solving (Zimmer, 2011).

### **Research on Social Networking**

Notions about the origin of social media are varied. The term *media* did not emerge until the 1920s (Briggs & Burke, 2005). Social networks formed long before the advent of digital technology. The earliest known use of social media was the telegraph in 1792, used to transmit and receive messages over long distances in the form of semaphore lines (Briggs & Burke, 2005). After the start of the 20th century, the radio and telephone were also used for social interaction, although only one-way communication



existed for the radio (Rimskii, 2011).

With the advent of Web 2.0 at the turn of the millennium, online services shifted from offering channels for networked communication to becoming “interactive, two-way vehicles for networked sociality” (Briggs & Burke, 2005, p. 5). For Castells (2007), the communication system of industrial society had centered around the mass media characterized by the mass distribution of a one-way message from one to many. The communication foundation of what Castells (2007) called today’s *network society* is the “global web of horizontal communication networks that include the multimodal exchange of interactive messages from many to many both synchronous and asynchronous” (p. 246). First launched in the scientific community in 1969, the Internet has in the last decade pervaded the entire world, boasting 1,000,000,000 users in 2006 (Pew Research Center, 2006) and now exceeding 2,405,518,376 users (Miniwatts Marketing Group, 2012). Social networking has spread with similar speed with about half of all adults in countries such as Spain, the United States, Russia, and the Czech Republic using sites such as Facebook (Pew Research Center, 2012).

Although making electronic social connections has received a great deal of attention in recent years, the first e-mail was sent in 1971 from one computer situated next to another computer (Raytheon, 2012). E-mail was not available to the public, however, until the public release of the Internet in 1991. As to predecessors of the World Wide Web, in 1978, the first bulletin board systems exchanged data over phone lines with other users. Bulletin-board systems users logged into a system that allowed them to upload and download files, read news, or exchange messages with other users. Without the functionality of the Web, the first bulletin board systems did not support color or graphics.

First conceived by Duke University students in 1979, the Usenet was similar to a bulletin board system (Lueg & Fisher, 2003). Usenet is an electronic system that is not moderated by a central administrator and does not have a dedicated server. The system is mediated through an ever-changing configuration of servers that relay messages in the form of newfeeds (Rimskii, 2011). The first copies of early Web browsers were distributed through Usenet.

Early studies on social networking focused primarily on social identity presentation, privacy, and social network formation and analysis (Jones & Soltren, 2005). Seldom has research inspected the influence of online social networking on students' learning from a pedagogical perspective. Perhaps the earliest research on a specific social network was an investigation by Adamic et al. (2003) that examined the social network Club Nexus on the Stanford University campus. Although several prior studies had focused on characterizing online interactions such as event organization and photo sharing (Yee, 2001), others had attempted to measure the effect of the Internet on real life social interactions (Wellman, Quan-Haase, & Chen, 2002; Wellman, Boase, & Chen, 2002), the work of Adamic et al. (2003) had a somewhat different focus. While learning much about the online community itself, these researchers were more interested in gleaning from it insights about the underlying social networks of the real world.

Club Nexus, also known as Nexus Net, consisted of 2,469 Nexus users and 10,119 links between them (Adamic et al., 2003). Two individuals were considered linked if they included each other on their buddy lists. Users were able to browse the network using the graphic interface and automatically contact their neighbors out to a specified radius. For example, to organize an event, they were able to invite just their friends or their friends' friends. Club Nexus users were able to send email and invitations,

chat, post events, buy and sell used goods, search for people with similar interests, place personal advertisements, display their artwork, or post editorial columns.

The registration process required users to identify basic demographic information and to add a list of interests and hobbies to their profile by selecting as many choices as they liked from a predetermined menu of social activities, athletics, movies, music, and book genres. These preferences could then be used by the system to match users with similar preferences. In the final step of the registration process, users were asked to select three items from a menu of adjectives to describe their personalities, the kinds of people they turned to for support, the ways they liked to spend their free time, and what they looked for in friendship and romance (Adamic et al., 2003).

The resulting user profiles yielded a rich dataset from which conclusions about users' preferences and network activities could be drawn. In analyzing the social network, the researchers observed a small-world effect (Watts & Strogatz, 1998) in which the distance between any two users, measured in the number of hops along the Nexus Net, was only four on average ( $M = 4$ ). Given the diversity of the network's users, including graduate and undergraduate students belonging to a myriad of age groups and academic concentrations, this average might have been considered low. Adamic et al. (2003) acknowledged this seemingly counterintuitive aspect of the small-world phenomenon, explaining that individuals tend to socialize in smaller cliques, not larger ones. These cliques are often determined by factors such as year in school, department, or dorm, yet any two users are in close proximity on the social network separated by only a small number of hops.

The degree to which cliques are present can be determined by measuring the amount of clustering, also sometimes referred to as transitivity (Newman, Strogatz, &

Watts, 2001). For Watts and Strogatz (1998), the clustering coefficient is a measure of the extent to which nodes in a graph tend to cluster together. Evidence suggests that in most real-world networks, nodes tend to cluster in dense groups. Their likelihood to cluster tends to be greater than the probability of a tie randomly created between two nodes. In the Club Nexus study, the clustering coefficient revealed that many of a user's friends' friends were also friends of the users themselves (Adamic et al., 2003). This fact might explain why Club Nexus' clustering coefficient of 0.17 was 40 times higher than it would have been for a random network with the same number of users and connections. This statistic indicated "a significant amount of structure in the social interactions reported in Club Nexus" (Adamic et al., 2003, para. 11). Watts and Strogatz (1998) resolved this apparent conflict between clustering and short paths by using a simple model of social networks to show that as long as there is a small fraction of random connections between cliques, social networks could display both high clustering and small average shortest paths.

In order to understand how students learn in a social context, it is important to understand how Club Nexus facilitated the dissemination of ideas on a network and how people find kindred spirits on a social network. This study provided insights into how to model Club Nexus' dynamics and incorporate them into online learning environments.

The prevalence of social networking and its impact on students' digital lives has initiated other studies. The 202 online students who participated in a study conducted by Scribner (2007) reported that "social networking areas of an online course were important for engaging their motivation to learn and for supporting their motivation to persist in learning" (p. 3). Scribner concluded that by addressing students' instructional and motivational needs and incorporating those motivational elements in the course's

instructional design, the potential that students would learn and persist in instruction could be increased.

Such is the case with the social aspects of self-construction when taking an online course (Scribner, 2007). Students in virtual high school classes reported that they first checked the social networking areas of the CMS when they logged into the class. They not only checked those areas on the first day of class, but they also checked the social networking areas throughout the course. They spoke about working with peers and networking together to solve a common problem. They also stated that having an engaged, involved, supportive teacher was essential for maintaining their motivation to persist in the learning activities. Scribner concluded that by addressing students' instructional and motivational needs and incorporating those motivational elements into the course's instructional design, the potential that students will learn and persist in instruction can be increased. This supports previous research that a high level of interaction between peers and teachers with students results in greater student satisfaction (Board on Children, Youth & Families, 2003; Klem & Connell, 2004). Students who enjoy supportive interpersonal school relationships have a more positive academic attitude, higher satisfaction with school, and are more academically engaged (Klem & Connell, 2004). Supportive social networks make students feel respected and valued by both peers and teachers, leading to a higher level of engagement in learning. Linking higher levels of engagement in school with improved performance, researchers have found student engagement a robust predictor of student achievement and behavior in school, regardless of socioeconomic status (Skinner, 1995; Skinner, Zimmer-Gembeck, & Connell, 1996). Students engaged in school are more likely to earn higher grades (Goodenow, 1993; Willingham, Pollack, & Lewis, 2002).

According to researchers in China (Tian, Yan Yu, Vogel, & Chi-Wai Kwok, 2011), online social networking sites such as Facebook can help students become academically and socially integrated as well as improve their learning outcomes. Drawing upon social integration theory, this study developed a conceptual model to ascertain to what extent social networking through Facebook affected college students' learning outcomes through nurturing their social and academic integration. Tian et al. (2011) reported that Facebook usage is approximately 90% across campuses, and many educational institutions offer new students orientation sessions on how to capitalize on social networking to improve their educational experience and their academic outcomes. While acknowledging how social networking helps students facilitate informal interactions with peers and faculty that are critical to integration into the university, Tian et al. emphasized that because of positive learning attitudes and well being, the impact of social networking on academic learning might be indirect and need a "longitudinal interactive process" (p. 276).

The pervasive presence of Facebook seems to be expanding. Harvard University, Massachusetts Institute of Technology, New York University, and other institutions of higher learning now deliver orientation on Facebook for their freshmen (Jones & Soltren, 2005). Cornell University's "Thoughts on Facebook" addresses student awareness about the responsible use of online social networking (Mitrano, 2006).

Social networks keep students and teachers connected by transcending the barriers of time and space. In a seminal study, researchers at the University of Minnesota (2008) documented the educational benefits of social networking sites such as MySpace and Facebook. The Pew Research Center (as cited in Fox, 2005) reported a digital divide in which low-income students were technologically impoverished. By 2008, however,

Greenhow (2011) found that Internet usage of teenagers from families earning \$30,000 or below was reported at 84%, or 21 percentage points higher than what the Pew study had found. The same study found that low-income students are in many ways just as technologically proficient as their more affluent counterparts. Of the students observed, 94% used the Internet, 82% go online at home, and 77% had a profile on a social networking site. When asked what they learned from using social networking sites, the students reported technology skills, followed by creativity, openness to new or diverse views, and communication skills. Greenhow, a principal investigator of the study, found that students using social networking sites were practicing the kinds of 21st century skills considered integral to improving their creativity and technical skills. Greenhow declared that these students stayed in school and achieved at higher rates than students who did not use social networking for education purposes.

Other recent studies have suggested that social networking has the potential to prepare students for future academic pursuits. Tian et al. (2011) departed from previous approaches to research that focused on identity presentation, privacy, and how social networks form. Recognizing the popular reaction to the proliferation of Web 2.0 tools in that they can have deleterious effects on students' abilities to concentrate and that they detract from serious study, Tian et al. posited that "students' online social networking directly influences social learning and can positively influence academic learning" (para. 2). The research team conducted discussions with college students to understand current online social networking behavior and attitudes towards using Facebook for education. In focus-group interviews, students reported that social networking allowed them to connect with the faculty and other students in terms of social relationships, provide comments and share knowledge with peers, join groups established for courses, collaboration, and

manage projects. Predicating their research on evidence from various studies showing peer pressure as one of the most important influences on students' lives, the researchers hoped to understand the influence of online social networking and how schools and universities might improve instructional practice.

Institutions of higher learning seldom promote both academic and social learning outcomes for students (Tian et al., 2011). The bulk of the emphasis continues to be on academic learning, ignoring the benefits of social learning among students, particularly in Asian regions. It becomes necessary to clarify the relationship between academic learning and social learning by investigating the impact of online social networking applications on students' learning outcomes and underlying structures.

A number of researchers indicated that peers are the most potent influence on college students' lives (Ellison, Steinfield, & Lampe, 2007; Helliwell & Putnam, 2004; Tinto, 1987). Students network with peers to form basic feelings of self-esteem and life satisfaction (Helliwell & Putnam, 2004). Tinto (1987) proposed a model in which students' social networking with peers reflected their social integration and the commitment to their university shaped their academic integration. Tian et al. (2011) theorized that social integration and academic integration potentially link students' social networking to their learning outcome. They attempted to conceptually and empirically explain how online social networking affected students' learning from the social-integration perspective. Developing a conceptual model to measure how students involved in social networking on sites such as Facebook undergirded their learning outcomes by promoting their social and academic integration, the researchers conducted three rounds of focus-group discussions involving 14 college students. The participants hailed from a variety of ethnic backgrounds and college majors, were evenly represented



by gender, were in various stages of their college careers, and had numerous Facebook friends, checking their accounts at least once daily. Qualitative focus-group results demonstrated that all of the participants considered Facebook a useful social networking application and were enthusiastic about using it for building up their social networks and establishing virtual relationships with peers. They found that Facebook could enhance and maintain friendships, whether online or offline, an important aspect of their lives. The college students believed that Facebook facilitated their peer interactions, which were often informal and spontaneous, as opposed to academic learning, viewed as formal.

Not only did comments elicited by the focus groups reinforce the notion that Facebook could support their educational efforts, the survey participants also suggested additional teaching activities mediated through Facebook (Tian et al., 2011). One such suggestion was the creation of a champion student page, where students were seeded according to their academic performance. Visitors could learn from these academic champions, finding out who they were and what learning behaviors were recommended. Some participants also recommended that their instructors create course pages to encourage instructor-student interaction. Course syllabi, students enrolled, and other resources were suggested as features of these pages.

Although all of the participants reported robust Facebook usage for sharing feelings and maintaining social relationships, reports of the academic uses of Facebook were scant (Tian et al., 2011). For example, clear academic learning outcomes such as using a Facebook application to collaborate with peers on an academic project were rarely reported. Students who did report academic benefits of the social networking site tended to be more senior students, locally situated, with a much longer record of Facebook use. More junior students, on the other hand, especially nonlocal ones, were

less positive about using Facebook applications as academic learning tools and were less willing to adopt such techniques. The researchers concluded that the discrepant attitudes between underclassmen and upperclassmen could be attributed to the greater appreciation of Facebook's academic benefits enjoyed by the senior students "whose self-efficacy on learning in the university and technological usage would be greater than junior students" (Tian et al., 2011). Furthermore, it seems that senior students had a more positive view of the integration of their social and academic lives. Some reported that "Learning and using Facebook is possible to merge" (p. 271) and that "Yes, I probably will enjoy [Facebook usage for learning]. Using Facebook will make me more active and willing to learn because it can also be a tool for entertainment" (p. 271). Less experienced college students, however, took a dim view of the integration, insisting upon the bifurcation of social learning and academic learning.

The work of Tian et al. (2011) reinforced the notion that online social networking greatly influences college students' social lives. Concluding that social media applications (not limited to Facebook) have potential utility for education, they emphasized the advantages of social networking when constructivist instructional strategies are adopted. Social networking applications facilitate students' informal interactions with their peers and instructors, integrating them more deeply into the institution of higher learning. Stemming from the qualitative data collection, these researchers observed that "the impact of online social networking on students' social learning is straightforward while its impact on academic learning might be indirect and need a longitudinal interactive process" (p. 273). These findings indicated that educational organizations may need to adopt "active (but somewhat restrained) actions to utilize existing social network applications such as Facebook for education" (p. 273).

It is believed that the core-periphery mode of social networking promoted by Facebook nurtures close relationships with core friends and weak relationships with peripheral ones (Interscience Publishers, 2011). Tian et al.'s (2011) work further concluded that online social networking applications offer “an efficient platform for college students’ socialization by expanding their network scope and maintaining close relationships” (para. 5). Moore (1997) asserted that distance education “is not simply a geographic separation of learners and teachers, but, more importantly, is a pedagogical concept” (p. 22). Coining the term “transactional distance” (p. 22), Moore (1997) described a plethora of teacher-learner relationships that exist when barriers of time and space interpose. It is this juxtaposition of the transactional distance between close and peripheral friends that enables students to use Facebook for two purposes—social and educational. Students reported that Facebook provided an array of social functions, including (a) enhancing and maintaining friendships, (b) building social networks/establishing virtual relationships, (c) diminishing barriers to making friends, (d) following peer trends, (e) sharing photos for fun and leisure, and (e) keeping in touch with family (Tian et al., 2011). Concerning learning, students reported that Facebook allowed them to perform a variety of educational functions as well, such as (a) connecting with the faculty and other students; (b) providing comments to peers/share knowledge; (c) sharing feelings with peers; and (d) joining groups established for subjects and collaboration, including notification, discussion, course schedule, project management calendar, and use of educational applications for organizing learning activities (Tian et al., 2011).

Karpinski (2009) challenged earlier research by finding a relationship between frequent Facebook use and lower academic performance. This exploratory study was one

of the first to find a relationship between Facebook use and academic achievement. Karpinski found that typically, Facebook users in the study had GPAs between 3.0 and 3.5, whereas nonusers had GPAs between 3.5 and 4.0. The researcher also concluded that there was a disconnect between students' claim that Facebook use did not influence their studies and the findings showing that they had lower grades and spent less time studying. Users reported that they averaged 1 to 5 hours a week studying, whereas nonusers studied 11 to 15 hours per week.

Attempts by researchers to replicate the results of this well-publicized Ohio State University study failed to find a significant relationship between use of the popular social networking site and diminished grades, however. Analyzing three existing data sets sampling more than 1,000 undergraduates, a national cross-section of 14- to 22-year-olds, and a nationally represented longitudinal sample of American youth, researchers at Northwestern University (2009) found no evidence that Facebook use correlated with lower academic achievement. Hargittai (as cited in Northwestern University, 2009) had also explored the social and policy implications of the Web and drew similar conclusions. Although no positive correlations between Facebook use and academic achievement were found, the researchers declared that "the Internet and social networking sites in particular can be used in many ways, some of which may be beneficial to the user and others less so" University of Minnesota, 2008, para. 6).

The Internet and social networking can be used educationally in a variety of ways. Despite some conflicting evidence, spending time cultivating social networks can affect individuals positively, because fostering relationships can bolster the social learning aspect of education. On the other hand, most would argue that excessive time spent on

Facebook or other social networking sites could erode academic performance, as well as other aspects of life.

Other researchers have produced studies that involved social media, proffering additional insights into their use for instruction. Dron (2006) contributed to the definition of the term *social software* and investigated important elements of its use in education, particularly related to transactional control. Dron (2006) conceived social control as a component of Moore's (1986) theory of transactional distance. Transaction "connotes the interplay among the environment, the individuals, and the patterns of behaviors in a situation" (Moore & Kearsley, 1996, p. 200). Dialog and structure were identified as the most influential factors of transactional distance. Moore and Kearsley (1996) defined dialog as a process that helps participants in the instructional process to "focus on the interplay of words, actions, and ideas and any other interactions between teacher and learner when one gives instruction and the other responds" (p. 201). The extent and nature of this dialog is determined by several factors, including (a) educational philosophy, (b) personalities of the instructors and learners, (c) environmental conditions, and (d) the content of the online course.

Moore (1997) theorized that relative amounts of dialog and structure determine the extent of transactional separation between distance learners and instructors. Moore (1980) defined structure as

the extent to which the objectives, implementation procedures, and evaluations procedures of a teaching program are prepared, or can be adapted to meet specific objectives, implementation plans, and evaluations methods of individual students. Structure is a measure of the educational program's responsiveness to the learner's individual needs. (p. 21)

Saba and Shearer (1994) concluded that dialog and structure are inversely interdependent, meaning the greater the structure, the less need there is for dialog, and the

greater the dialog, the less need there is for structure. In 1984, Moore added another dimension to the analysis of transactional distance. Autonomy, Moore (1984) posited, is “the extent to which in the learning-teaching relationship, it is the learner rather than the teacher who determines the goals, the learning procedures and resources, and the evaluation decisions of the learning program” (p. 85). In the optimally autonomous learner, there is no need for dialog or structure. Like dialog and structure, moreover, autonomy is seldom absolute (Dron, 2007). Since Moore’s idea of the concept, autonomy has been refined. Candy (1991) observed that there is a big difference between autonomy as a character or personality trait and the autonomy afforded the learner in choosing a learning path within a learning environment.

Dron (2006) proposed a model connected to transactional distance called transactional control. Transactional control focuses on the choices made by learners and instructors in the traditional or online learning context. The dynamic and mutable interplay of which choices are made by whom determines the participants’ degree of transactional control at any given time. Dron (2007) cautioned that transactional control theory is not intended to replace transactional distance theory. Transactional control theory does not seek to investigate the etiology of the psychological gap between learner and instructor; it merely seeks to explain some of its dynamics. For Dron (2007), structure equates to teacher control, dialog to negotiated control, and autonomy to learner control. At various points in the teaching-learning continuum, transactional control will vary. It is connected to the “choices that determine a change in the [learning] trajectory, not those that follow from the intrinsic logic of the transaction nor from the extrinsic constraints which mould it” (pp. 60-61).

Social software allows learners to choose whether to control or be controlled in a

learning transaction. Declaring that social software treats the participating group as a first-class object within the system (Allen, 2004), Dron (2007) observed that it has become embedded in all aspects of online life. Its ubiquity is manifested in a multitude of ways, including recommendations from online retailers and photo sharing sites to purchasing recommendations from Google search results. Dron (2007) further portrayed the pervasiveness of social software as exemplified by blogs, wikis, hyperlink sharing sites, and other tools using tagging, social recommendations, and social navigation. He also distinguished the inchoate characteristics of social software from those that have evolved into more robust tools featured in e-learning environments, offering “notable benefits to informal and lifelong learners” (p. 60).

### **Modes of Interaction**

Although much has been written about the interactions of students and instructors across the centuries, the literature that focuses on the online facilitation of learner-teacher interaction is scant (Anderson & Kuskis, 2007). The instructional benefits of learner-teacher interaction related to motivation (Wlodkowski, 1985) and feedback (Laurillard, 2000) have been acknowledged for traditional and distance education alike. Although learner-instructor interaction can be facilitated through audio or videoconferencing, studies have shown that these synchronous experiences in themselves do not have a direct benefit for educational outcomes (Russell, 2005). Researchers have asserted that sound principles of instructional design and application of technology have a far greater impact on learning than any one medium (Clark, 1994). Online instructors who have become accustomed to learning environments that impose temporary restrictions in learner-teacher interaction must perceive “relative advantage” for the instructors (Rogers, 2003, p. 233). Tools of social networking may be implicated in the optimization of interaction

in online learning environments.

Anderson and Kuskis (2007) described six modes of interaction in distance education: (a) learner-teacher interaction, (b) learner-learner interaction, (c) learner-content interaction, (d) teacher-content interaction, (e), teacher-teacher interaction, and (f) content-content interaction. These modes of interaction have been studied to varying degrees, with learner-learner interaction receiving the most emphasis. Although the bulk of the research involving learner-learner interaction has focused on face-to-face instructional delivery involving school-age children, adults have also been shown to benefit from interactions with peers with similar professional aspirations (Schön, 1991). Early forms of distance education, such as correspondence, did not benefit from the fruits of cooperative learning (Anderson & Kuskis, 2007). With the advent of the CMS and other online learning environments equipped with various forms of social networking, new forms of learner-learner interaction have been developed that would not be possible in the face-to-face setting. Damon (1984) averred that “intellectual accomplishments flourish best under conditions of highly motivated discovery, the free exchange of ideas and the reciprocal feedback between mutually respected individuals” (p. 340). Learners who engage in peer interaction, grounded or online, are forced to “construct or formulate ideas in a deep learning sense” (Anderson & Kuskis, 2007, p. 297). This social construction of knowledge, manifested in communities of practice and situated learning, can influence student achievement.

Weblogs (blogs) can support the construction of knowledge in a situated context. Distinguished from the corporate type, blogs are published by individuals, and their style is personal and informal (Walker, 2003). First appearing in the 1990s, blogs quickly gained popularity as free and simple-to-use Web-authoring tools. Because all users with



an Internet-connected device, stationary or mobile, can access a weblog or publish their own, blogs present a variety of content, viewpoints, and philosophies, with daily subscriptions ranging from dozens to hundreds of thousands. Walker (2003) formulated her final definition of weblog or blog as “a frequently updated website consisting of dated entries arranged in reverse chronological order so the most recent post appears first” (para. 3).

Efimova and Fiedler (2004) examined the use of social media in learning communities, concluding that an increasing number of professionally oriented weblog projects offer “an emergent environment for the creation of loosely coupled learning networks that transcend organisational and institutional boundaries” (p. 1). It is important to parse the differences between blogs and news sources. What makes them different is not the content published but the personalities behind them (Efimova & Fiedler, 2004). Compared to topic-centered or community-centered online discussions, blogs often provide a narrative of the individual’s thinking and feelings about topics under discussion, evoking insights into the author’s beliefs and values systems. “The selected content a weblog author finds interesting enough to link to and to comment on, functions as a public record of personal interest and engagement” (p. 3). Such blog protocols empower persistent weblog writers to become master disseminators of information for their loyal followers. Efimova and Fiedler (2004) also argued that regular reading of specific blogs often germinate more personal relations and “loosely coupled networks of weblog authors” (p. 3).

In an effort to show how blogs can enhance learning, Efimova and Fiedler (2004) compared the qualitative responses from 62 bloggers and 20 nonbloggers to an online survey about their motivation to have a blog, as well as context, technology, and personal

traits that support blogging. Responding to the motivation for wanting to start a blog, some of the study participants reported learning-related purposes. These purposes included the need or desire to organize ideas and references, such as keeping research notes, organizing bookmarks, moving information from other tools to a weblog, or to improve their authors' thinking and learning as a result of articulation or receiving feedback.

Efimova and Fielder (2004) also reported learning-related effects that emerged after a blog was started. Some bloggers discovered that maintaining a blog helped improve their knowledge and skills, particularly in the areas of technology, writing, self-discipline, organization, ability to pose questions, and ability to distinguish between public and private. Others respondents reported that “serendipity, feedback and dialogues in the blogosphere” (p. 4) contributed to the evaluation and development of their ideas. Many weblog authors commented on the social effects of weblogging, such as “amplified networking and relation building, finding people with similar interest or new friends, and community-forming” (p. 4).

Reflecting upon the results of their data collection, Efimova and Fiedler (2004) proposed several broad implications of blogs for learning. First, the intricate ecosystems created in the blogosphere seem to support learning from multiple perspectives. They argued that “peer-filtering of ideas and serendipitous connections between people based on their interests” (p. 4) supports both group thinking and individual thought. Individual thought is supported by the open-ended nature of blogs, nurturing diversity and originality. Second, the researchers proposed that blogs represented “synergies of self-organised and community learning” (p. 4). The open-learning platform does not promote a group learning agenda or learning style. Contributors can benefit from community

feedback, whether or not their contributions are consistent or inconsistent with the topic under discussion. Third, distributed apprenticeship emerges from professional blogs. Regular reading of others' blogs furnishes novices with opportunities to learn from experts' public discourse. Role models are selected and engaged in conversations that transcend geographical or disciplinary barriers. Finally, blogs support the development of meta-cognitive skills. Efimova and Fiedler (2004) related that the digital vocalization of inner conversations through blogs and the concomitant reflective thinking makes the content accessible by hundreds, thousands, or even millions of bloggers for review and revision. This process encourages and enhances the acquisition of better skills for intellectual and personal growth.

The proliferation of social networking, evolving from the rudiments of early electronic mailing list applications and electronic bulletin boards to today's interconnected online communities, presents unprecedented opportunities for research and analysis. Since the birth of Web 2.0 technology, the number of online social network applications has continued to increase (Interscience Publishers, 2011). The electronic nature of online community membership and participation can help researchers study human social behavior and social interactions from a macro to a granular level. Such a trove of information and insights into the digital lives of students should prove valuable in uncovering the potential educational benefits of social networking.

Additionally, Berger and Luckman (1966) asserted that all knowledge, including the most basic, taken-for-granted, common-sense knowledge of everyday reality, is derived from and maintained by social interactions. If it is impossible to learn in isolation (Bandura, 1977), collaboration fosters the construction of meaning. The collaborative power of wikis, blogs, and other forms of social networking seems self-evident.

## **Summary**

Increasing demands for educators to improve student learning and narrow the achievement gap between regular and special education students have sparked interest in the educational benefits of newer technologies. Although the research is scanty, educational social networking, undergirded by Bandura's social cognitive theory, may provide benefits that increase student engagement and participation in learning. With the ubiquity of the Internet and students' high level of participation in social media, the common learning environment that can be developed through teacher-directed social networking warrants further study.

## **Research Questions**

Three research questions guided this study:

1. Is the mean Benchmark Assessment for Personal Financial Literacy (BAPFL) score of students in classes where social networking was used statistically significantly different from the mean BAPFL score of students in classes where it was not used?
2. Is the mean BAPFL score of regular education students statistically significantly different from the mean BAPFL score of special education students?
3. Is there an interaction showing that the gap between mean BAPFL scores of regular education and special education students in classes where social networking was used statistically significantly different from the gap between the scores of regular education and special education students in classes where it was not used?

## **Chapter 3: Methodology**

### **Introduction**

Chapter 2 explored the existing literature on human learning, social cognitive theory, and the influences of social networking. Chapter 3 presents the quantitative research design for the study. All components of this quasi-experimental study are discussed, including the selection of experimental and control groups, the participants' demographics, and social networking as the treatment. The process used to test the validity of the data-collection instrument is also discussed. Finally, the statistical procedures and analysis are outlined, and the researcher's hypotheses delineated.

### **Quantitative Design**

Creswell (2008) asserted that quantitative research methods should be used when the researcher asks specific questions, collects quantifiable data from participants, analyzes the results statistically, and conducts the study in an unbiased manner. A quantitative method, quasiexperimental research design was used in this study to compare outcomes for experimental and control groups. Investigators use quasiexperimental research when they intend to establish whether the independent variable had an influence on the dependent variable. Attempts were made to control all variables that influenced the outcome except for the independent variable, using intact groups that make random assignment of subjects impossible.

Different from experimental design, quasiexperimental design includes assignment but not random assignment of participants to groups (Creswell, 2008). Intact groups of students were studied, because the school setting prohibited the formation of artificial groups. The researcher identified intact groups as the experimental and control treatments, but teachers conducted experimental treatment activities with the

experimental group only and then administered a test to assess differences between the two groups. Random assignment controlled extraneous factors that were “influences in the selection of participants, the procedures, the statistics, or the design likely to affect the outcome” (Creswell, 2008, p. 301). The test measured gains in knowledge after the application of the treatment.

### **Participants**

The target population was high school students exposed to a standards-based curriculum in a large suburban mid-Atlantic kindergarten through Grade 12 district. The sample included 155 students in Grade 11 under the instruction of two teachers of the same course and rigor under the direction of the same instructional supervisor.

The participants ranged in age from 16 to 18 years and represented the two genders fairly equally. Reflecting the demographics of the school district, approximately 89% of the students in the classes were Caucasian, 9% were African American, and 2% were either Asian or Hispanic. Special education students made up approximately 10% of the sample, some requiring accommodations specified in their individual education plans. None of the participants was considered limited English proficient, given the small population of English as a second language learners in the general population of the school.

Underpinning this study was Bandura’s (1977) social learning theory. It was therefore assumed that the gap between the academic achievement of regular and special education students would narrow if the treatment of social networking was applied. Similarly, the researcher sought to determine whether achievement gaps within each subgroup were also narrowed when social networking was present. Employing the procedure of convenience sampling (Creswell, 2008), participants were extracted from

the entire student population by their random enrollment in classes taught by the two teachers. Each of the teachers instructed classes integrating educational social networking, and each also delivered the same course without social networking. Because students' course selections result in random enrollment through student-management software, students and staff members did not generally have the ability to influence the selection of teachers. This measure should have ensured a higher degree of internal validity, minimizing the selection of "individuals who are brighter, more receptive to treatment, or more familiar with a treatment for the experimental group" (Creswell, 2008, p. 308). In addition, this method allowed for the random distribution of special education students in both the experimental and control groups.

The teachers whose students were studied were experienced, state-certified instructors in the areas of social studies and family and consumer science. The teachers delivered Personal Financial Literacy instruction both with and without the treatment of social networking, enabling greater internal validity.

### **Social Networking as the Treatment**

The student participants engaged in discussion forums as their primary social networking experience. Of the 155 participants, 94 were enrolled in a class that required participation in asynchronous discussion forums and 61 were enrolled in a class with more traditional instruction devoid of social networking. The treatment consisted of 12 discussion prompts created by the teacher in the Blackboard CMS. The first discussion prompt students encountered after registering for the course was an optional *Help!* thread where students could seek advice about the navigation of Blackboard, the creation of digital content, the clarification of course content, and the solution of software problems. The second prompt of the course called for students to write a brief autobiography. Eight

prompts followed that probed student understanding of the course content, one per unit of study. Other prompts were created on demand depending on the progress of student learning, such as a thread that explored the nature of the final course assessment and questions about students' career aspirations.

Because the course was delivered in a semester, students were expected to attend to each mandatory thread in a 14-week period, approximately one per week. The discussion prompts were for the most part released at the beginning of the semester, enabling students to plan and work ahead at their own pace. Students were expected to respond to the initial discussion prompt by Tuesday of each instructional week and respond to at least two other students by the following Sunday. Some of the prompts required a research-based response using Modern Language Association style. In general, the responses were expected to be well-reasoned reflections that probed for deeper understanding and refrained from merely praising the author.

### **Instruments and Data Sources**

Facing intense pressure from federal, state, and local authorities to improve student achievement, the use of data has become more critical to how many educators evaluate their practices and monitor students' academic progress (Knapp, Swinnerton, & Monpas-Huber, 2006). Moving toward a more rigorous, data-driven teacher evaluation system, the state of New Jersey planned to use such assessments as an indicator of teacher effectiveness, particularly on content areas not subject to standardized testing (New Jersey Department of Education [NJDOE], 2010). Personal Financial Literacy, a graduation requirement recently mandated by the NJDOE and the subject of this study, is an example of a nontested subject.

The data-collection instrument for this study was the Benchmark Assessment for



Personal Financial Literacy (BAPFL) administered as a final examination for the course, representing the dependent variable. Created by the teachers of the course, this assessment was evaluated for content validity and reliability. Content-related evidence demonstrates the degree to which the sample items on a test are representative of a content domain (Popham, 2006). Popham also referred to validity as “the accuracy of inferences based on students’ responses to assessment devices such as tests, inventories” (p. 79). Two subject-matter experts in the field of financial literacy examined the test items for validity before it was used. If a test item was regarded as invalid by both test experts, it was deleted. If a test item was regarded as valid by one expert but not the other, the experts were asked to discuss it and prepare a version that both agreed was valid, if possible. If they agreed after discussion that no valid version of the item was possible, it was deleted.

The data-collection instrument was also examined for reliability. Because the BAPFL was administered only once, it was not possible to test it for stability reliability. The instrument was not used to determine classification consistency in which a test is administered two or more times in order to reliably place a student in a particular classification, such as *proficient* or *partially proficient*. Alternate-form reliability in which two or more forms of the same test are used also did not apply to the BAPFL. However, the instrument was tested for internal consistency reliability. This type of reliability used data from a single test administration to establish the extent to which the test items were internally consistent with one another or the extent to which the items were homogeneous (Popham, 2006). A widely used index of the homogeneity of a set of dichotomously scored test questions is the Kuder-Richardson coefficient (Cronbach, 1951). Cronbach (1951), however, recommended the use of coefficient alpha as a more

generalizable estimate of the internal consistency of a set of test items. This coefficient enabled the researcher to determine reliability by measuring the percentage of variance of student performance on the test that was attributable to the trait shared by the items, which the experts had agreed was personal financial literacy.

### **Instrument Reliability, Validity, and Editing**

Two subject-matter experts (SMEs) reviewed the BAPFL items (see the appendix) for validity. In general, they viewed the BAPFL as an extremely comprehensive tool to evaluate students' understanding of personal financial literacy. Both SMEs, however, found faulty phraseology in four test items, resulting in the deletion of those questions from the BAPFL. The SMEs provided rationales for these deletions. For example, the SMEs found that Item 16 was poorly worded and could lead to confusion, Item 21 needed more information to provide a clearer expectation of the correct response, Item 28 was poorly worded in general, and Item 68 was invalid because of its general vagueness.

Along with errors in phraseology or content, the second SME found a procedural flaw in the BAPFL. On Page 5 of the BAPFL, a set of directions required the test takers to use a graphic to answer Questions 58 through 63. Those directions should have referred to Questions 45 to 49. All perceived problems with the BAPFL were resolved before its administration to students.

The BAPFL scores measured the dependent variable of student achievement. The BAPFL measured student knowledge and understanding of such topics as consumerism, banking, and personal risk management. Skills such as the ability to calculate payroll taxes were also assessed. The test items took the form of selected response or multiple choice and matching. The scores were computed by calculating the ratio of correct

responses to the overall number of test items. The BAPFL was taken in person and proctored by a certified teacher of personal financial literacy in a quiet classroom setting. The BAPFL was a pencil-and-paper test with responses recorded on a form that was electronically scored.

The values of the independent variable, special education students, were determined after the BAPFL was administered to avoid the need to have students self-identify. The researcher obtained the students' special education status from the school district's guidance department. Once the independent variables of special education status and experience with social networking were determined, statistical analysis of student performance on the BAPFL yielded conclusions about the differences in the dependent variable of student achievement within the sample and between the special education and regular education subgroups.

## **Procedures**

The Personal Financial Literacy course is a New Jersey graduation requirement and is based on New Jersey Core Curriculum Content Standard 9.2 (NJDOE, 2013). The course of study was designed by the teachers who deliver the course and approved by the curriculum supervisor and board of education. The course of study included a pacing guide, delineation of major units of study, student learning objectives, and other common components to ensure the fidelity of the curriculum. All major assessments were standardized to enable comparison of student achievement under the instruction of different teachers. The horizontal matrix for Standard 9.2 is included in the appendix.

The application of social networking was central to this study. Students in the treatment groups engaged in periodic and frequent discussion forums primarily aimed at deepening their understanding of the Personal Financial Literacy course. Although the

social networking activities differed somewhat depending on the teacher, all students engaged in discussion forums. The nature and duration of the social networking activities was discussed in greater detail earlier in this chapter.

**Design.** As discussed, two independent variables were in the study, social networking and whether students were or were not special education. Social networking was originally measured as a continuous variable, but when there was little difference between the amount of students' use in classes where it was available, it was turned into a nominal variable—whether it was used in a class or not.

Special education was also a nominal variable and was obtained from student records. It showed whether each student was classified as regular education or special education. The students' BAPFL scores as described were the dependent variable.

With the two nominal, independent variables and the continuous BAPFL score as the dependent variable, ANOVA was used to test the following hypotheses. The BAPFL means, the BAPFL standard deviations and the number of cases for each of the groups defined by the independent variables were reported so that the ANOVA results could be related to the research questions and hypotheses.

**Research hypotheses.** Chapter 2 listed the three research questions. Following are the three guiding research questions with their corresponding null and alternative hypotheses.

1. Is there a statistically significant difference between the mean scores on the BAPFL for students who were engaged in teacher-directed social networking and those engaged in traditional instruction?

H<sub>0</sub>: There is no difference between the mean scores on the BAPFL for students who were engaged in teacher-directed social networking and those engaged in traditional

instruction.

$H_a$ : There is a difference between the mean scores on the BAPFL for students who were engaged in teacher-directed social networking and those engaged in traditional instruction.

2. Is there a statistically significant difference between the mean scores on the BAPFL of regular and special education students?

$H_o$ : There is no difference between the BAPFL scores of regular and special education students.

$H_a$ : There is a difference between the BAPFL scores of regular and special education students.

3. Is there an interaction showing that the gap between the mean BAPFL scores of regular education and special education students in classes where social networking was used statistically significantly different from the gap between the mean scores of regular education and special education students in classes where it was not used?

$H_o$ : There is no interaction showing that the gap between the mean BAPFL scores of regular and special education students when social networking is and is not infused in their classes.

$H_a$ : There is an interaction showing that the gap between the mean BAPFL scores of regular and special education students when social networking is and is not infused in their classes.

**Data analysis.** Descriptive statistics of  $N$ , mean, and standard deviation of BAPFL scores were provided for all groups and subgroups of students. The researcher had school district personnel export student achievement data from the PowerSchool Web-based student information system and import into IBM SPSS version 17.0. The

imported data were used to compute inferential statistics. According to Creswell (2008), inferential statistics enable researchers to use data from a sample and make generalizations about the population from which the sample was drawn. Inferential statistics allowed the researcher to “compare two or more groups on the independent variable in terms of the dependent variable” (p. 190). The independent variables were the presence or absence of social networking and the type of student (regular or special education), and the dependent variable was academic achievement.

### **Summary**

The perennial problem of how to improve student achievement continues to pose daunting challenges. Limited research pointed to the potential of increasing student engagement in learning through social networking. This study used social networking as a treatment, seeking to find statistical relationships between learning and the presence or absence of the treatment. In addition, the researcher sought to examine whether the treatment had a different effect for regular and special education students. The analysis of the impact of social networking for educational purposes may yield important implications for teaching and learning.

## Chapter 4: Results

The purpose of this quasiexperimental study was to determine the effects of social networking for educational purposes on the academic achievement of regular and special education students in a secondary school setting. Academic achievement was measured by student performance on the BAPFL. The literature review revealed an insufficient body of research to show definitively whether student participation in social networking contributes or detracts from learning or has no effect. There is almost no research to show whether social networking has differing effects on regular education versus special education students. Chapter 3 introduced and outlined the two-way ANOVA research design used in this study, which examined the academic performance two independent variables of engagement in social networking and educational status and the interaction of these variables. Chapter 4 presents the results from one administration of the BAPFL to six classes of high school students and includes their scores on this assessment.

An index of internal consistency, Cronbach's alpha, was applied to the BAPFL scores, the total number of items answered correctly. The responses of 155 students to 100 test items were analyzed in SPSS, resulting in an acceptable interitem reliability,  $\alpha = .877$  where  $\alpha = .80$  is considered acceptable.

This study intended to determine whether social networking played a role in how regular education students performed on the BAPFL, a measure of their proficiency in the Personal Financial Literacy course, versus their special education counterparts. In order to answer the research questions, this chapter reports the statistical analysis results of the following null and alternative hypotheses:

1. Is there a statistically significant difference between the mean scores on the

BAPFL for students who were engaged in teacher-directed social networking and those engaged in traditional instruction?

$H_0$ : There is no difference between the mean scores on the BAPFL for students who were engaged in teacher-directed social networking and those engaged in traditional instruction.

$H_a$ : There is a difference between the mean scores on the BAPFL for students who were engaged in teacher-directed social networking and those engaged in traditional instruction.

2. Is there a statistically significant difference between the mean scores on the BAPFL of regular and special education students?

$H_0$ : There is no difference between the BAPFL scores of regular and special education students.

$H_a$ : There is a difference between the BAPFL scores of regular and special education students.

3. Is there an interaction showing that the gap between the mean BAPFL scores of regular education and special education students in classes where social networking was used statistically significantly different from the gap between the mean scores of regular education and special education students in classes where it was not used?

$H_0$ : There is no interaction showing that the gap between the mean BAPFL scores of regular and special education students when social networking is and is not infused in their classes.

$H_a$ : There is an interaction showing that the gap between the mean BAPFL scores of regular and special education students when social networking is and is not infused in



their classes.

## **Findings**

The researcher analyzed the findings as they applied to the four treatment groups, consisting of regular and special education students exposed to either social networking or traditional instruction. The analysis of the BAPFL scores showed that there was no significant difference in mean BAPFL scores attributable to social networking when educational status was ignored. Therefore, the small mean difference between the group participating in social networking and the group participating in traditional instruction was probably due to chance. However, the data also showed that the mean difference between all regular education and all special education students was not attributable to chance when social networking was ignored. The *F* value was highly significant, with a probability of less than .001.

A statistically significant interaction showed that the gap between the BAPFL scores of regular education students and special education students depended on whether social networking was used. The interaction between educational status and social networking met the traditional significance value ( $p < .05$ ). In other words, special education students who engaged in social networking outperformed their peers who were exposed to traditional instruction. These findings may have important implications for instructional design.

Table 1 displays the naturally occurring differences in the four treatment groups of regular and special education students who did not engage in social networking and who did engage in social networking. Students' BAPFL scores were used to test the differences among these treatment groups.

Table 1

*Benchmark Assessment for Personal Financial Literacy Means and Standard Deviations for Use of Social Networking for Regular (R) and Special (S) Education Students*

	<i>N</i>		Mean		<i>SD</i>	
	R	S	R	S	R	S
Social networking						
Used	78	16	69.97	59.19	10.66	10.45
Not used	46	15	72.15	53.07	9.80	9.57

### **Hypothesis 1: Overall Effect of Social Networking**

Because two independent variables were studied, a two-way ANOVA was performed on the BAPFL data. Table 1 showed that the overall differences between the social networking group ( $M = 68.14$ ,  $SD = 11.33$ ) and the nonsocial networking group ( $M = 67.46$ ,  $SD = 12.73$ ) was small. Table 2 shows that the difference was not statistically significant ( $F = .897$ ,  $df = 1/151$ , N.S.). The statistics supported the conclusion that there was no statistically significant difference between the BAPFL scores of students who engaged in social networking and those who did not when differences in educational status were ignored.

Table 2

*Analysis of Variance of Benchmark Assessment for Personal Financial Literacy Scores*

Source	Mean square	<i>df</i>	<i>F</i>	Significance ( $p <$ )
Educational status	5450.31	1	51.46	.001
Class type	94.96	1	.897	.345
Educational status X class type	420.63	1	3.971	.048
Error	105.92	151	—	—

### **Hypothesis 2: Overall Effect of Regular Versus Special Education**

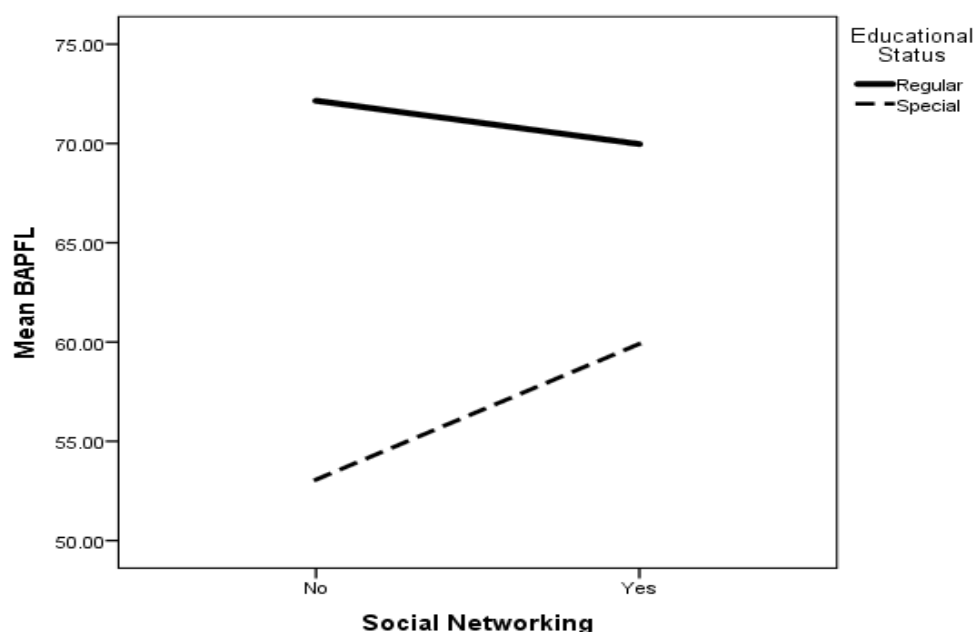
BAPFL scores were also used to test the second null hypothesis that there was no statistically significant difference between the mean scores on the BAPFL of regular and special education students when educational social networking was ignored. Table 1, however, showed that the mean score of the regular education students ( $M = 70.87$ ) exceeded the mean score of the special education students ( $M = 56.23$ ). Table 2 showed that the difference was highly significant ( $F = 51.46$ ,  $df = 1/151$ ,  $p < .001$ ). This means that the mean difference between all regular education and all special education students was highly unlikely to be due to chance. Thus, the researcher accepted the alternate hypothesis, that there was a statistically significant difference between the BAPFL scores of regular and special education students when social networking was ignored.

### **Hypothesis 3: Joint Effects of Educational Status and Social Networking**

BAPFL scores were also used to test the third hypothesis that the size of the gap between the mean BAPFL scores of regular and special education was changed by the infusion of social networking. Table 1 showed that when social networking was infused, the mean score of regular students was 69.97. For special education students, the mean was 59.19, a difference of 10.78 points. When social networking was not infused, for regular education students the mean was 72.15, and for special education students it was 53.07, a gap of 19.08 points. Thus, the infusion of social networking reduced the size of the gap for special education students by 8.30 points. Table 2 showed that the Educational Status x Social Networking interaction was statistically significant ( $F = 3.97$ ,  $df = 1/151$ ,  $p < .05$ ), indicating that the difference in the size of the gap was not because of mere chance.

Figure 1 graphically displays the interaction of the mean BAPFL scores of the

regular and special education students. Although the BAPFL scores of the regular education students decreased when social networking was infused, the BAPFL scores of the special education students increased under the same conditions. The narrowing of the achievement gap between the two groups led the researcher to accept the alternate hypothesis.



*Figure.* Interaction of mean Benchmark Assessment for Personal Financial Literacy (BAPFL) scores.

## Summary

The purpose of this study was to determine whether the treatment of social networking could be used to close the BAPFL score gap between regular and special needs students. Although social networking was found to have an insignificant effect on learning when educational status was ignored, the data showed that the mean difference between the regular and special education treatment groups was not due to chance when social networking was ignored. Finally, the data revealed a statistically significant interaction between the scores of regular and special education students depending on

whether the treatment was used. In other words, the gap between the BAPFL scores of regular and special education students depended on the infusion of social networking. This statistically significant finding showed that social networking could be used for the purpose of narrowing achievement gaps. Chapter 5 discusses how this result is consistent with Bandura's social cognitive theory.

## **Chapter 5: Discussion**

Chapter 4 presented the results of the two-way ANOVA analysis aimed at determining the effect of social networking on student achievement. For this study, high school students who were enrolled in a Personal Financial Literacy course that was delivered both through traditional face-to-face instruction and with the infusion of social networking took the same end-of-course assessment to measure their mastery of the course content. The end-of-course assessment, the BAPFL, was found to be very reliable statistically and was validated by two SMEs. Although the educational status of the students, regular or special, was known for the purposes of this study, the researcher deidentified their demographic data in order to protect their privacy. The analysis of the BAPFL results led the researcher to draw conclusions about three research questions:

1. Is there a statistically significant difference between the mean scores on the BAPFL for students who were engaged in teacher-directed social networking and those engaged in traditional instruction?
2. Is there a statistically significant difference between the mean scores on the BAPFL of regular and special education students?
3. Is there an interaction showing that the gap between the mean BAPFL scores of regular education and special education students in classes where social networking was used statistically significantly different from the gap between the mean scores of regular education and special education students in classes where it was not used?

### **Interpretation of Results**

A convenience sampling of 155 high school juniors and seniors took the BAPFL at the end of the Personal Financial Literacy course. The research design allowed for statistical measurements between the independent and dependent variables. The

independent variables for this study were social networking and educational status. The dependent variable for this study was student achievement as measured by the BAPFL. Of the 155 students whose BAPFL results were analyzed, 124 were classified as regular education, and 31 were classified as special education. Seventy-eight of the regular education students experienced social networking in the course, and 77 students experienced traditional instruction without social networking. Sixteen special education students experienced social networking in their course, and 15 students did not. Therefore, a total of 94 students participated in educational social networking and 61 did not have that experience. The researcher examined the BAPFL scores to see whether social networking made a difference in those results and whether social networking affected BAPFL performance differently when educational status was not ignored.

**Overall effect of social networking.** Based on the results of the statistical analysis in Chapter 4, the researcher failed to reject the first null hypothesis. There is no statistically significant difference between the mean BAPFL scores of students engaged in educational social networking versus those whose classroom instruction did not include that experience. Based on these findings, in terms of end-of-course assessment scores, social networking in the form of discussion forums does not make a difference when educational status is ignored.

These results cast doubt upon the potential benefits of a common environment in which social learning takes place. The virtual environment of social networking is expected to empower users to chat, organize events, exchange ideas, share photographs, make announcements, and meet new friends (Adamic et al., 2001). The observations of Vygotsky (1978) and Wartofsky (1983) were also contradicted. These theorists claimed that by building social media connections, users should be able to transform their

environments and restructure the functional systems in which social learning occurs. In addition, the researcher anticipated that the social networking features of Web 2.0 would empower students to alter their learning environments to improve learning, not just technical implementations (Lewis et al., 2010). The statistical findings did not confirm this expectation.

**Overall effect of regular versus special education.** Based on the results of the statistical analysis in Chapter 4, the researcher accepted the second alternate hypothesis. There is a statistically significant difference between the BAPFL mean scores of regular and special education students. Although there is a dearth of research examining the influence of online social networking on students' learning from a pedagogical perspective, Scribner (2007) studied social networking in the context of online courses. In that study, 202 students who took an online course reported in a survey that the social networking areas of the CMS were important for motivating them to learn and to persist in learning. Representative of the conclusions derived from the qualitative portion of the survey, Scribner reported that one student explained that the discussion groups were important in finding out the opinions of peers. Scribner concluded that by addressing students' instructional and motivational needs and incorporating those motivational elements in the course's instructional design, persistence in learning could be increased.

Likewise, little research has been conducted in the use of alternative methods of communication to meet the needs of special education students. Hall (2011) believed that social media may provide opportunities for students diagnosed with autism spectrum disorder to interact with peers in a manner that is nonthreatening and safe. Similarly, Kummings (2010) found that social media platforms open doors to communication among students who might not function as well in a traditional classroom setting.



Kummings also argued that the most effective learning occurs when students are engaged actively, and social media applications support the engagement quotient. Web-based platforms such as Twitter, Ning, Google Docs, and Skype provide collaborative tools that teachers can use to effectively engage their students. Consequently, schools continue to find many ways to integrate social media into their curricula. These might include blogging, multimedia projects, professional development, collaborative group projects, and communication between school and home (Davis, 2010).

**Joint effects of educational status and social networking.** Finally, BAPFL scores were also used to test the third hypothesis that the size of the gap between the mean BAPFL scores of regular and special education students was changed by the infusion of social networking. Based on the results of the statistical analysis in Chapter 4, the researcher failed to reject the third null hypothesis. Although the BAPFL scores of the regular education students decreased when social networking was infused, the BAPFL scores of the special education students increased under the same conditions, narrowing the gap between the two subgroups.

Bandura's (1989) social cognitive theory stipulates that people's behaviors can often be predicted as a function of their belief in their own capabilities (Pajares, 2003). Often referred to as self-efficacy (Bandura & Locke, 2003), an individual's level of self-efficacy influences motivation and performance. This focus on students' self-beliefs as a major component of academic motivation is predicated upon the construct that the beliefs that students "create, develop, and hold to be true about themselves are vital forces in their success or failure in school" (Pajares, 2003, p. 8).

In a mixed-methods study, Francis (2012) investigated online social experiences of students with disabilities. Concentrating on students' use of assistive technologies,

mobile media, and self-efficacy for online courses, the study integrated social cognitive theory, self-efficacy, and Universal Design for Learning (UDL) to triangulate the results (Patton, 2002). Community college students in southern California who met the criteria for the study voluntarily chose to participate in the quantitative survey portion of the study ( $N = 42$ ), the qualitative semistructured interview ( $N = 9$ ), or both ( $N = 9$ ). The findings suggested that students' awareness of learning accommodations, their use of assistive technologies, use of mobile media, instructor feedback, instructor engagement with students, and organization of the instructor were important influences on their learning and experience in an online academic environment (Francis, 2012). Although the study was limited to students with disabilities, the findings suggested that such accommodations may benefit all students but special needs students in particular. The researcher expected social networking to have a stronger effect on special education students, and the statistical findings confirmed that expectation.

### **Findings in the Context of Research**

Bandura's (1989) social cognitive theory underpinned this study. Although Bandura did not discount the influence of environment on human learning, he placed heavier emphasis on the influence of the social context. The type of social networking used in the Personal Financial Literacy course is an example of Bandura's social context. Conte and Paolucci (2001) defined social learning as "a process of learning caused or favored by people being situated in a common environment and observing one another" (para. 5.2). The researcher expected social networking to represent this common environment in which learners could observe and imitate others' behavior. He also expected that this common environment would enable the learners to not only perceive each other for comparison and self-evaluation but also see others as "a neutral source of

information, which may help or speed several forms of instrumental learning” (Conte & Paolucci, 2001, para. 5.2). The data did not support these expectations, however, as there was no significant difference between the means of students who engaged in educational social networking and those who did not. The researcher expected higher achievement when students engaged in social networking because learners who engage in peer interaction, grounded or online, are forced to “construct or formulate ideas in a deep learning sense” (Anderson & Kuskis, 2007, p. 297). Although it was anticipated that special education students who engaged in social networking would score higher on the BAPFL, it was not anticipated that regular education students’ scores would decrease slightly.

Although public school teachers today are being asked to teach to a broad range of learners with varied learning exceptionalities (Rose, Sethuraman, & Meo, 2000), it is becoming increasingly clear that traditional instruction is not adequate to meet the instructional needs of many of these students (Coyne, Kameenui, & Carnine, 2007). Federal laws like NCLB and resulting state initiatives have increased the level of accountability for teachers, requiring them to make strides with all students, including students with learning disabilities. UDL has been suggested as a way to address those needs (Meier, 2013). UDL is “a set of principles for curriculum development that give [sic] all individuals equal opportunities to learn” (Center for Applied Special Technology [CAST], 2013, para. 1). Universal Design for Learning “provides a blueprint for creating instructional goals, methods, materials, and assessments that work for everyone—not a single, one-size-fits-all solution but rather flexible approaches that can be customized and adjusted for individual needs” (CAST, 2013, para. 2).

While the results of this researcher’s study indicate that certain pedagogies, as the

use of social networking, may help special education students more than their regular education peers, UDL as a pedagogical framework may help teachers design curricula in ways that support all students in gaining access to the general education curriculum. In general, UDL may help all students become more successful learners.

Rose and Meyer (2002) described UDL as an “educational framework based on research in the learning sciences, including cognitive neuroscience, that guides the development of flexible learning environments that can accommodate individual learning differences” (p. 5). Recognizing that individuals learn in different ways (Ormrod, 2012), the UDL framework, first defined by the Center for Applied Special Technology CAST in the 1990s, calls for the creation of curriculum from the outset that incorporates three brain networks (CAST, 2013): (a) multiple means of representation to give learners various ways of acquiring information and knowledge, (b) multiple means of expression to provide learners alternatives for demonstrating what they know, and (c) multiple means of engagement to tap into learners’ interests, challenge them appropriately, and motivate them to learn.

Recognition is the first brain network. This network governs how learners gather facts and categorize what they see, hear, and read. Identifying letters, words, or an author’s style are recognition tasks, the *what* of learning. The strategic network involves planning and performing tasks and ideas are organized and expressed. Writing an essay or solving a math problem is a strategic task that represents the *how* of learning. The affective network specifies how learners become engaged and stay motivated, influencing how they are challenged, excited, or interested. This network deals with affective dimensions, the *why* of learning (CAST, 2013).

Curriculum, as defined in the UDL literature, has four essential components

aimed at making learning more accessible: (a) instructional goals, (b) methods, (c) materials, and (d) assessments (Rose & Meyer, 2002). UDL is intended to increase access to learning by reducing physical, cognitive, intellectual, and organizational barriers to learning, as well as other obstacles. One way UDL proposes to eliminate such barriers is the implementation of inclusionary practices in the classroom, where students are placed in the least restrictive environment. Simoncelli and Hinson (2008) asserted that a curriculum driven by UDL should also infuse options to make learning accessible and appropriate to students with diverse backgrounds, abilities, learning styles, and disabilities.

The National UDL Task Force is currently working to influence the Obama administration and Congress to adopt the UDL principles in federal legislation and policy (National Center for Universal Design & Learning, 2013). Although UDL is referred to by name in the Higher Education Opportunity Act (HEOA) of 2008 and is also mentioned in the 2004 reauthorization of the Individuals with Disabilities Education Act (IDEA), no clear government mandate to implement UDL exists (Karger, 2005). With the current emphasis on equal access to curriculum by all students and the accountability required by IDEA 2004 and No Child Left Behind legislation, a comprehensive approach to curriculum and instruction underscores the need for a practice that will accommodate all learners (CAST, 2013).

### **Limitations of the Study**

This study had several limitations that may have affected the ability to generalize the results. The first limitation is the relative lack of ethnic diversity of the students enrolled in the Personal Financial Literacy course. The research district's students are relatively homogeneous in racial and ethnic composition, thus, making it difficult to

generalize the findings to a more diverse study population. Similarly, the participating teachers were also ethnically and racially homogenous. It is possible that a replication of the study using more diverse participants and subjects may yield different results.

This study was also limited to three specific threats to external validity (Cook & Campbell, 1979). The first specific threat was interaction of selection and treatment, as the study was conducted in one high school and was limited to one geographic region with a particular socioeconomic group and a limited range of ages. The second threat, the interaction of setting and treatment, may have limited the ability to generalize from the setting where the study occurred to other settings. It seems certain that the relationship of social networking to student achievement may vary tremendously when comparing the results of the elementary and the high school settings. For example, the safety and security of elementary students must be safeguarded in ways different from their secondary school counterparts. Finally, Cook and Campbell (1979) described interaction of history and treatment as the third potential threat to external validity. The timing of the study may have produced results that were attributable to special circumstances and were therefore not generalizable to other points in time. For example, the research results could have been conflated by the fact that the classes studied occurred in the second semester of the 2012-2013 academic year rather than the first semester. This time frame included the final weeks of the school year, a time when many teachers and students are distracted by end-of-year tasks and activities. This schedule may have affected student efforts.

Finally, the student participants selected through convenience sampling may not have been representative of the entire student population. However, the sample could have provided useful information for confirming hypotheses (Creswell, 2008). Although the researcher attempted to ensure the consistency of the student groups studied, random

assignment was relied upon as the most effective way to ensure the equality of groups (Gay & Airasian, 2003). The researcher attempted to control for the various instructional strategies teachers employed, but there was no way to ensure that these items were what influenced student achievement or behavior.

### **Suggestions for Further Study**

This research study provides the basis for a number of recommendations for future research. Jenkins, noted media researcher and Director of MIT's Comparative Media Studies Program, has dubbed our present culture "participatory culture" (Jenkins, 2009, p. 2). This new culture is characterized as a relentlessly connected world in which students must learn how to participate in the flow of knowledge. Their success is judged by their ability to derive "value from—and providing value to—a dynamic two-way flow of information, trust, and credibility" (Zimmer, 2011, p. 1). Typically, American school systems block social media for students. More work needs to be done in creating a balance between safe technology management and effective student participation in social communication and collaboration.

The number of students diagnosed with learning disabilities continues to rise, particularly in the area of autism spectrum disorder (Toth & King, 2008). Key features of autism spectrum disorder include anxiety and social dysfunctions, adversely affecting social relationships, learning, and self-efficacy. Social media may provide alternate channels for students with learning disabilities to communicate with peers, instructors, and others in the greater online community. One recent study discovered that students with autism spectrum disorder are already using social media to make and maintain friends (Hall, 2011). The global presence of social networking sites has now been expanded to reach 82% of the world's online population, representing some 1.2 billion

users around the globe (comScore, Inc., 2011). The largely untapped potential of social media to forge relationships and partnerships presses for research into how these technologies change student behavior and learning.

Finally, the promise of UDL looms large as a curricular model to expand learning opportunities for all individuals, especially those with disabilities (CAST, 2013). Based on the research and development of innovative, technology-based educational resources and strategies, UDL may help instructional designers and teachers harness the power of social media for learning. Because there is a lack of evidence of the effectiveness of connecting social learning with UDL, much more research must be done.

## **Conclusion**

Researchers have tirelessly studied human learning from a variety of perspectives in an effort to improve procedural and declaratory knowledge (Ormrod, 2012). The nature of society's participatory culture, however, beckons researchers and educators to study the new ways in which students construct knowledge, connect with each other, and express themselves through social media. Learning how to participate collaboratively and contribute to group problem-solving are considered basic life skills, not media literacy skills (Jenkins, 2007). The significant difference of BAPFL scores at the intersection of special education status and social networking warrants further research and experimentation as a means of closing achievement gaps. As a framework for making curriculum more inclusive, UDL may serve as a platform from which to support the types of social learning now expected in today's global classrooms and workplaces.



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## Appendix

### Benchmark Assessment for Personal Financial Literacy

### Benchmark Assessment for Personal Financial Literacy

Match the terms below to the following definitions and fill in appropriate letter box.

#### SAVINGS & INVESTING

A	Liquidity	D	Mutual Funds	AC	Stocks
B	Diversification	E	Rule of 72	AD	Interest Income
C	Simple Interest	AB	Compound Interest	AE	Corporate Bonds

1. Payments you receive for allowing financial institutions to use your money.
2. Interest earned only on the principal.
3. Ability to quickly turn an investment into cash.
4. Shares of ownership in a business.
5. Bonds issued by corporations usually used to finance building and equipment.
6. Quick way to see how long it will take to double your money invested at a given rate.
7. Interest earned on interest.
8. Strategy for investing where you spread your investments over a variety of investment products.
9. A group of stocks, bonds, and other investments managed by investment experts.

TRUE/FALSE: Fill in A for True or B for False on your answer sheet.

10. Simple interest earns you more money than compound interest.
11. The FDIC is a government agency that insures bank accounts for up to \$250,000.
12. A principle called the Rule of 72 provides a quick way to see how long it will take to triple your money invested at a given rate.
13. It is important to not put all your money in a savings account because the interest you earn will probably not keep pace with the rate of inflation.
14. With investing, as opposed to saving, you have a better chance of earning more, but you also have a greater chance of losing more.
15. Diversification helps to reduce risk.

MULTIPLE CHOICE: Choose the correct answer and fill in the appropriate box completely.

16. Put off spending to save money.
  - a. Liquidity
  - b. Compound interest
  - c. Opportunity cost
  - d. Simple interest
17. Which typically pays a higher interest rate?
  - a. Checking account
  - b. CD
  - c. Savings account
18. Simple interest is computed on \_\_\_\_\_.
  - a. The principal
  - b. The principal plus the interest earned
  - c. The principal minus the interest earned
  - d. The principal divided by the interest earned
19. \_\_\_\_\_ is the ease with which an asset can be converted into cash without losing value.
  - a. Investment
  - b. Liquidity
  - c. Risk
  - d. Dividend
20. The Act that requires financial institutions to provide information about costs and interest-earning accounts in uniform terms is \_\_\_\_\_.
  - a. Federal
  - b. Deposit Insurance
  - c. Secretary of Treasury
  - d. National Credit Union Administration
  - e. Truth in Lending
21. In the future, a dollar will be worth
  - a. Less than a dollar today.
  - b. More than a dollar today.
  - c. The same as a dollar today.
22. Which one of the following types of investments has the highest risk and the highest potential rate of return?
  - e. Savings bonds
  - f. Stocks
  - g. CD's
  - h. Mutual Fund

23. Compound interest is computed on \_\_\_\_\_.  
a. The principal  
b. The principal plus the interest earned  
c. The principal minus the interest earned  
d. The principal divided by the interest earned.
24. Many people put aside money to take care of unexpected expenses. If John and Jenny have money put aside for emergencies, in which of the following forms would it be of LEAST benefit to them if they needed it right away?  
a. Stocks  
b. Savings account  
c. Invested in a down payment on the house  
d. Checking account
25. Blue-chip, income, growth, and defensive are all examples of \_\_\_\_\_.  
a. Stock Classifications  
b. Stock Dividends  
c. Stock Markets  
d. Stock Quotations
26. What is the name for a market with a pessimistic (negative) outlook?  
a. Lion  
b. Eagle  
c. Bull  
d. Bear
27. All of the following are advantages of common stocks EXCEPT:  
a. Entitles you to voting privileges  
b. If a company fails, preferred stockholders have right to receive any assets that are left before other stock holders  
c. You gain growth potential if the dollar value of the stock increase or splits  
d. Can provide you with a source of income if the company pays you dividends
28. Even though buying stocks can be a risky investment, they are purchased because they  
a. Are a short term investment  
b. Are cheaper than other investments  
c. Could earn a higher rate of return  
d. Are protected by the Federal Government
29. Which federal agency regulates the stock market?  
a. FDA  
b. FBI  
c. SEC  
d. USDA

30. A person who owns a baseball card assortment, is investing in
  - a. Collectibles
  - b. Financial instruments
  - c. Precious metals
  - d. Stock
31. A stockbroker
  - a. Buys and sells securities
  - b. Teaches about the market at a local university
  - c. Sells bonds
  - d. Owns the stock exchange
32. Mr. Smith has a home, an automobile, a coin collection, and cash in the bank. Which is the most liquid investment?
  - a. Home
  - b. Coin collection
  - c. Automobile
  - d. Cash in the bank
33. What is an increase in the general level of prices?
  - a. Sales tax
  - b. Inflation
  - c. Dividend
  - d. Recovery
34. Which is the safest form of investment?
  - a. Savings account
  - b. Common stock
  - c. Preferred stock
  - d. Mutual fund
35. Place where most stocks are bought and sold.
  - a. Blue-chip market
  - b. Speculative stock broker
  - c. Stock exchange
  - d. Mutual fund
36. The two ways you can earn income from stocks is through capital gains and \_\_\_\_
  - a. Net change
  - b. P/E ratio
  - c. Mutual funds
  - d. Dividends
37. Profit from the sale of assets such as stocks, bonds, or real estate is called
  - a. Equity capital
  - b. Tax-exempt income
  - c. Capital gain
  - d. Tax deferred income

38. A disadvantage of investing in real estate is
- Lack of diversification
  - Increasing property values
  - Easy market entry
  - Decreasing property values

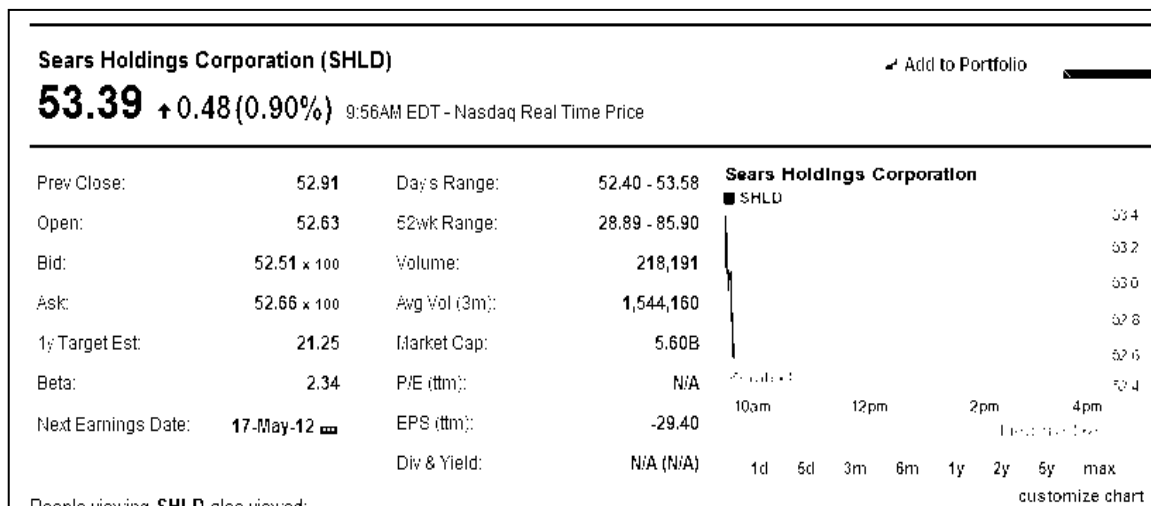
**MATCHING:** Match the terms below to the following definitions and fill in appropriate letter box.

A	Board of Directors	E	Earnings Per Share
B	Capital Gains	AB	Net Profit (Earnings)
C	Shares of Stock	AC	P/E ratio
D	Dividends	AD	Retained Earnings

- Amount of money a company earns over the costs of doing business.
- Relationship between the stock price and the earnings per share.
- The net earnings divided by the average shares outstanding.
- A group of people elected by stockholders that exercise powers granted by the corporation's charter.
- Represent ownership in a company.
- Payment to stockholders usually in the form of a quarterly check.



Use the stock quote below to answer questions 44-48



45. What would the price per share be to PURCHASE shares of SHDL?
  - a. \$53.39
  - b. \$52.91
  - c. \$52.66
  - d. \$52.51
46. What would be the price per share to SELL shares of SHDL?
  - a. \$53.39
  - b. \$52.91
  - c. \$52.66
  - d. \$52.51
47. What was the last trade price for SHDL?
  - a. \$53.39
  - b. \$52.63
  - c. \$52.91
  - d. \$52.51
48. How many shares of SHDL are available to be traded right now?
  - a. 218,191
  - b. 1,544,160
49. What does the EPS indicate for the stock SHDL?
  - a. The EPS indicates the company does not have high profits.
  - b. The EPS indicates the earnings per share is low
  - c. The EPS indicates you will not make a lot of money off this stock
  - d. All of the Above

## TAXES & INCOME

**MATCHING:** Match the terms below to the following definitions and fill in appropriate letter box.

A	1040EZ	AB	Personal Exemption	BD	Tax Evasion
B	1099-INT	AC	Sales Tax	BE	Unearned Income
C	Earned Income	AD	Standard Deduction	CD	W-2
D	Excise Tax	AE	Tax Audit	CE	W-4
E	Gift Tax	BC	Tax Avoidance		

50. Taxes levied by federal and state governments on the sale and transfer of certain items, such as cigarettes, alcohol, and certain luxury items.
51. A tax document sent to the employee at the beginning of the calendar year showing all earnings, deductions, and taxes withheld from the prior year.
52. Wages, Tips, Salaries, and other forms of work-place earnings.
53. A reduction in taxable income granted to each working person which varies by income earned and filing status.
54. An illegal way of reducing taxes by failing to declare all income or falsifying deductions, adjustments, and credits.
55. A detailed examination of your tax return by the IRS.

**True/ False Fill in A for True or B for False on your Scantron completely.**

56. Net income is the amount you receive after withholdings are subtracted from your gross pay.
57. A tax refund can be received by direct deposit to a taxpayer's account in a financial institution.
58. Income earned from tips at a golf course is not taxable.
59. Interest Income is considered unearned income.
60. The standard deduction reduces the income that is subject to tax.
61. The federal agency that collects taxes is the Internal Revenue Service.

Multiple Choice- Identify the choice that best completes the statement or answers the question.

62. Who completes the W-2 form?
- a. employer
  - b. IRS
  - c. employee
  - d. tax accountant
63. The Wage and Tax Statement is also known as
- e. form W-2
  - f. form W-4
  - g. form 1040EZ
  - h. d. 1040A
64. If your actual withheld tax amount is less than the scheduled tax due from the tax table, then you \_\_\_\_ some additional taxes
- i. Receive
  - j. Adjust
  - k. Owe
  - l. Refund
65. A form filled out by an employee that provides the information needed to determine the proper amount to withhold from your paycheck is a
- a. Form W-2
  - b. Form W-4
  - c. Bank deposit slip
  - d. None of the above
66. The number that reduces the amount of money withheld from your pay is
- a. Taxes
  - b. Allowances
  - c. Gross pay
  - d. None of the above
67. The form used to report taxable interest income from a savings account is a \_\_\_\_.
- a. Form W-4
  - b. Form W-2
  - c. Form 1040ez
  - d. Form 1099-INT

68. The United States uses a progressive income tax
- Because it raises a larger amount of money by taking more from high-income levels.
  - Because it is most fair to all groups.
  - Because it helps distribute the wealth.
  - All of the above.
69. A regressive tax takes a higher percentage of income from
- Higher income groups.
  - Middle income groups.
  - Lower income groups.
70. None of the above. What taxes are most employers required to withhold from their employees' pay?
- Federal, state and local taxes
  - Social security and Medicare taxes
  - State unemployment taxes
  - Employers are generally required to withhold all of the above. }
71. The tax certain items such as airline travel, phone service and gasoline is known as \_\_\_\_\_
- Personal Tax
  - Wealth Tax
  - Property Tax
  - Excise Tax
72. Tax structure when tax takes a larger share of income from people with a high income rather than from low-income earners is such as the Federal Government is known as
- Progressive
  - Regressive
  - Proportional
73. Tax structure when more money is taken from those with low income rather than high income such as City Sales Tax is known as \_\_\_\_\_.
- Progressive
  - Regressive
  - Flat
  - Proportionate
74. 1913 Congress ratified the \_\_\_\_\_ Amendment enabling the federal government to levy a tax on individuals based on personal income.
- 12<sup>th</sup>
  - 15<sup>th</sup>
  - 16<sup>th</sup>
  - 5<sup>th</sup>

75. All of the following are ways the government uses the taxing authority EXCEPT:
- a. stabilize the economy
  - b. influence behavior
  - c. generate revenue to provide goods and services for public's benefit
  - d. earn income

### **Credit and Loans**

76. A measure of your credit worthiness is your
- a. Credit rating
  - b. Credit
  - c. Credit debt
  - d. None of the above
77. A legal process in which people who cannot pay for their debts must surrender most of their property is called
- a. Debt
  - b. Bankruptcy
  - c. Credit
  - d. An acceleration clause
78. Asking another person, usually a parent, to agree to pay a debt for you if you become unable to pay is asking them to \_\_\_\_\_.
- a. Authorize a signature
  - b. Co-Sign
  - c. Unsecure a loan
  - d. Contact a credit counselor
79. The maximum amount you are allowed to charge on your account is the
- a. Quota
  - b. Grace period
  - c. Amount ceiling
  - d. Credit limit
80. The time between the billing date and the payment due date, when no interest is charged, is the
- a. Credit period
  - b. Grace period
  - c. Charging period
  - d. Interest period
81. Monthly minimum payments vary, based on the balance.
- a. Credit Card
  - b. Installment Loan
  - c. Student Loan
  - d. Mortgage
82. What type of loan is it? Monthly payments may be set for the life of the loan, or changed more frequently, depending on the type of interest rate.
- a. Credit Card
  - b. Installment Loan
  - c. Student Loan
  - d. Mortgage

83. What type of loan is it? Used for tuition and other college expenses.
- a. Credit Card
  - b. Installment Loan
  - c. Student Loan
  - d. Mortgage
84. Which of the 4 C's of credit describes whether you are able to repay your own?
- a. Capacity
  - b. Collateral
  - c. Character
  - d. Capital
85. Which of the 4 C's of credit describes whether or not the borrower is trustworthy?
- a. Capacity
  - b. Collateral
  - c. Character
  - d. Capital
86. Which of the following factors does not directly determine your credit score?
- a. The length of your credit history.
  - b. The current value of your home.
  - c. The amount of inquiries you have made upon your credit.
  - d. The current amount of loans you have right now.
87. Which of the following would be the best FICO score to have?
- a. 680
  - b. 790
  - c. 850
  - d. 899
88. An advantage of using credit is
- a. The increase of being a victim of fraud or rip-offs.
  - b. The increased cost of the purchase because of interest charges.
  - c. The many forms of hidden fees on the credit card bill.
  - d. Not having to carry large amounts of cash.

**True/ False Fill in A for True or B for False on your answer sheet.**

- 89. An example of a finance charge may be a late fee or a foreign transaction fee.
- 90. Credit card companies may change any of the terms of your agreement as long as they give you 45 days notice.
- 91. When sending in your payment, you may be charged a late fee even if the payment was postmarked by the due date if the credit company has not yet received it.
- 92. Consumers should take every credit card that is offered to them so they will have a variety of choices.
- 93. ATM machines enable you to receive a cash advance and add it to you credit card bill.



**MATCHING:** Match the terms below to the following definitions and fill in appropriate letter box.

A.	Credit	E.	Interest	AE.	Credit Rating
B.	Secured Loan	AB.	Variable Rate	BC.	Debtor
C.	Cash Advance	AC.	Grace Period	BD.	Cosigner
D.	Annual Percentage Rate	AD.	Finance Charge	BE.	Garnishment of Wages

94. Agreement to get money, goods, or services now in exchange for a promise to pay in the future.
95. The one who borrows money or uses credit.
96. A measure (score) of a person's ability and willingness to pay debts on time.
97. A loan backed by collateral is a \_\_\_\_\_.
98. When you borrow money on a credit card.
99. When a creditor can take all or part of your paycheck if you miss payments.
100. Determines the cost of your credit on a yearly basis.