

CALIFORNIA STATE UNIVERSITY, NORTHRIDGE

SOCIAL NETWORKING TO SUPPORT STUDENT LEARNING  
IN THE SEVENTH GRADE SCIENCE CURRICULUM

A thesis submitted in partial fulfillment of the requirements  
For the degree of Master of Art's in Education, Elementary Education

By  
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ABSTRACT  
SOCIAL NETWORKING  
IN THE SEVENTH GRADE SCIENCE CURRICULUM

By

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Master of Arts in Education, Elementary Education

This thesis examined how social networking for academic purposes can be utilized to support students' science learning at the seven-grade level. As part of the study on social networking three factors were measured: a) academic achievement, b) motivation, and c) engagement. One hundred seventh grade students in a science class were the participants for this study. Fifty-seven percent of the students participated in social networking (47 percent through Instagram and 10 percent through Facebook) and 43 percent did not participate in social networking. Through social networking assignment updates, reviews and discussions were held. The social networking was introduced in the third quarter of the academic year. A comparison between the students who participated in social networking and those who did not participate in social networking was conducted. Additionally, a comparison between student performance before social networking use and during social networking use was conducted. Data were collected through a survey, interview, overall performance in the class, and performance on a collective exam. Study results indicate that academic achievement increased with the use of social networking. Also, student engagement and motivation increased with the use of social networking.

Key words: *Social Networking, Academic Achievement, Engagement, Motivation, Science, Seventh Grade, Support, Missing Assignments, Student-Teacher Relationships, Instagram, Facebook, Junior High*

## **Chapter 1**

### **Problem Statement and Context**

#### **General Statement of the Problem**

In today's rapidly technologically evolving society, social networking is taking on increased relevance for people of all ages. Specifically, students are increasingly spending more and more time on social network sites and less time on academics. Therefore, the use of social networks to facilitate student engagement in academics (science engagement in this study) is a research topic that should be investigated. Science is one content area of the curriculum that students often times have a difficult time comprehending and being able to engage in academic discussions regarding scientific ideas, concepts, theories, and terminology. With increases in scientific knowledge through new findings and more science and engineering related job opportunities in the future, it is imperative that the students know how to understand science and be part of the scientific community.

In this study, a teacher researcher who taught seventh grade science at a junior high school conducted this action research project in which she used social networking to support student science learning. The research focused on lack of student achievement, motivation, and engagement in the science curriculum. The teacher researcher used social networking to engage students in learning and documented evidence by collecting qualitative data. Student performance data was collected from past student performance and was compared to data from students who did not participate in social networking. In addition to the comparison data, the teacher researcher collected data from surveys and conducted interviews with her students.

## **Local Context of the Problem Under Study**

The junior high under study is located in a public school district in Southern California and is located north of the city of Los Angeles. The following demographic data describes the school's make up in comparison to the district and the state as a whole. The information collected in reference to the school's demographics is from the National Center for Education Statistics (2013), unless noted otherwise. In 2013, the total school enrollment was 1,250. Of the 660 student populations that were enrolled in seventh grade, 590 were enrolled in the eighth grade. This study focuses on the seventh grade science curriculum. The 660 students are divided amongst five seventh grade science teachers. In each class period, an average of 36 students are enrolled. The California State average per classroom is 27. The class averages at the school are high compared to the state average of students in each classroom. Therefore, the school under study has more students in each classroom compared to the classrooms across California, making it more difficult to meet students' needs.

The school under study has a very diverse population of students. Forty-five percent of the population is identified as Caucasian, 43 percent Hispanic, seven percent Asian, four percent African American, and four percent identify with two or more races. At the district level, Caucasians make up 75 percent, and Hispanics comprise 24 percent of the student population. The distribution of student demographics can be seen in Table 1.1.

<b>Ethnicity</b>	<b>Percentage</b>	<b>Gender Distribution</b>	<b>Number of Students</b>
Caucasian	45 %	M: 46% F: 54%	563
Hispanic	43 %	M: 51% F: 49%	538
Asian	7%	M: 67% F: 33%	88
African American	4%	M: 44% F: 56%	50
Other	1%	M: 48% F: 52%	11
			Total students= 1,250

*Table 1.1: Student Demographics of School Under Study*

During the year of the study, the API score for the school under study was 858, which was higher than the previous year in which the API score was 845. The API scores at this particular school site have been climbing in the recent years. Ten percent of the student population is classified as gifted, meaning the students are considered to be exceptional critical thinkers and have high academic standing and grades. Seventeen percent of the enrolled students are English Language Learners and 11 percent are students with special needs. Also, 35 percent of the student population is considered low income. At the school under study, there are 30 teachers. Four of the educators teach seventh grade science, and one other teaches seventh and eighth grade science to the students identified as Special Education. Twenty-five of the teachers have websites, of which 82 percent are through weebly.com, showing that not all the teachers use the Internet to update their students. The school also has a Facebook and Instagram that students can access. None of the teachers at this school use Facebook or Instagram to communicate with their students.

## **National Context of the Problem**

Since 2001, with the passage of No Child Left Behind, also known as NCLB, there has been a push to teach the content that is tested at the state level. Schools have been striving for incremental increases in test scores in content areas of math and reading. In elementary schools, time devoted to subjects such as science and social studies have been cut short and reduced, so that a majority of the day students engage in math and reading to raise test scores (Hamilton & Friesen, 2013). As students transition into junior high and middle school, they are expected to take courses that focus on all content areas, including science. However, in their educational past, they typically received a maximum of thirty minutes a day in either science or social studies. By having a lack of experience in science and social studies, students often struggle and find these subjects to be valued less and not required knowledge. Teachers need to reach out to the students and support them to facilitate their understanding of subjects they are not as proficient at such as science.

**Movement to Common Core.** As California and several other states transition to Common Core, students will be expected to demonstrate more higher-level critical thinking. The common core standards embed literacy in all content areas including science. As outlined in the Common Core Standards (2013), students will be asked to demonstrate an ability to research and find text to support a claim, synthesize information from various sources, comprehend various text, and also form an opinion about the topic. The Common Core standards will “ensure more consistent exposure to materials and learning experiences through curriculum, instruction, and teacher preparation among

other supports for student learning” (Learn More Go Further, 2014). Theoretically, students throughout the state will be exposed to a more rigorous curriculum that embeds relevance to the 21<sup>st</sup> century global workforce in anticipation of ensuring students are more prepared for the challenges they will face in the future and to ensure they graduate from high school career and college ready. Ideally, the notion of an enriched education will apply itself throughout the school curriculum including science. According to the National Science Teachers Association, the goal of science is to encourage “opportunities for students to develop understandings and skills necessary to function productively as problem-solvers in a scientific and technological world” (NSTA, 2012). Therefore, the science content taught is not only dedicated to the information found in the past, but current relevant 21<sup>st</sup> century discoveries and with the anticipation of technology and information and making the students become critical thinkers. For this reason, students will be expected to participate in scientific discussions that many students have little experience, due to the NCLB standards. The cognitive ability level of current students is in area of concern, as students have rarely required to think beyond the recall level. Students lack experience in the sciences, due to the fact that much of their elementary classroom exposure was heavily focused on math and literacy. Teachers must ensure they are frontloading science concepts, academic vocabulary, adding realia to lessons, and are integrating technology and resources to help students make necessary connections in an attempt to make sense of the science content and to be engaged with the science curriculum. Therefore, it is the teacher’s responsibility to provide students with ongoing and scaffold experiences and opportunities with the classroom by exposing the students to the curriculum that is relevant and enables them to conduct research in

order to solve problems and answer questions through the use of text and a variety of resources.

**Next Generation Science Standards.** On September 4, 2013 the state board of education adopted the *Next Generation Science Standards (NGSS)*. The new standards are for all students from Kindergarten through twelfth grade (K-12). The NGSS framework at the elementary and junior high grades focuses on intertwining physical science, life science, earth/space science, and engineering (2013). Upon entering high school students then take individual courses that focus on subject specific frameworks with continued integration of literacy standards. At the lower grade levels, each year, the sciences are to be taught and intertwined with one another. Meaning life science, physical science, earth/space science will focus on one areas and be covered each year at the junior high level. The goal of the NGSS standards for grades K-8 is intertwined with the intention of students can making connections across the different science frameworks, so they can begin to see connections amongst various concepts. With the new NGSS standards, high school students are now getting exposed to to more complex and relevant career engineering practices to help them become prepared and more competitive within the global workforce and ever-growing technology needs. Prior to NGSS, these courses have not commonly been taught in schools. The new standards embedded more technology allowing students to use resources and applications to understand the science content taught. With advances technology, more components can be added into daily instruction, which will promote student motivation and understanding of how science relates to the world around them. Students will be challenged to learn integrated science content and will therefore need to make connections between the different fields of

science. To do so, students will need to understand the relationship of atoms, energy, and ecosystems all within the same year (NGSS, 2013). Students will be challenged to think critically and apply their understandings of science throughout their education, and not just focus on the content taught in one science field.

### **Chapter Reflection**

When looking at the problem of poor achievement, motivation, and engagement in the sciences, these phenomena seem to be a problem in today's society. As scientific and technological advancements create new jobs in the field of science and engineering, students will need to be prepared to fill the positions that will become available in the future workforce. By only getting a minimal amount of instruction in the elementary school curricula, students are set up for failure to take required science coursework at the secondary school level. In order to get students interested in the vocabulary dense science curriculum, teachers need to come up with ways that students are engaged in their learning and academic discussions, motivated to participate in and out of class, and have an increased performance in academic measures. As the state moves towards the adoption of Common Core and the Next Generation Science Standards, students will have to be more involved with content across the sciences so that they can provide evidence for the conclusions drawn from their scientific investigations. The more experiences and resources students have, the more readily they will be to do well in the field of science now and in the future. Providing students opportunities to engage in social networking related to science can serve as a basis for academic success. Therefore, students that participate in social networking linked to science learning, will be given additional

resources and information to form connections with the content, making student more motivated and engaged in their own learning.

## **Chapter 2**

### **Literature Review**

Science has a strong social component to it and this is finding expression in the NGSS. Social networking may serve as a valuable tool for engaging students in the social dimensions of science. It is important to investigate the use of educational based social networking, because social networking is currently very popular in society. More specifically, it seems as though young people are spending more time on social networking sites and less time on their academic studies. In addition to the application of using the social networking sites just for social development, they can also be used to assist in instruction by enhancing students' academic understanding, motivation, and engagement. In this chapter, several factors related to social networking use will be considered before making the case for implementing social networking in the classroom connected to science learning and achievement.

#### **What is Science?**

Science is the “knowledge about or study of the natural world based on facts learned through experiments and observations” (Merriam-Webster, 2012). Science is one content area that students tend to have a difficult time comprehending due to lack of experience, minimum amount of meaningful engagement, and a focus on memorization and vocabulary dense material. The sciences are broadly divided into different branches including Physical Science, Life Science, and Earth Science. Each branch addresses particular natural phenomena, processes for collecting data. Students often fail to see the opportunity that arises from the advancements made in the sciences. More than 85 percent of students said that science was “too difficult to learn” (Johnstone, 1991). When

students find science challenging, they develop an apathetic viewpoint that turns them away from the science content area, which lowers motivation and achievement in science. Through an approach that is not textbook-centered, teachers can begin to surpass the minimum requirements outlined by the state and local curriculum (Roco, 2004). In doing so, students will be instructed to think critically and develop a stronger meaning and purpose for understanding the content taught in the science curriculum. In many elementary schools, the time devoted to the science content area is limited. Teachers at the elementary school level have been focusing on the content areas of mathematics and language arts because those are the two areas that the state mandated tests focus upon. Teachers need to find the time to teach science content, and change students' viewpoints about science to make their experiences more interesting, so students are motivated to learn to apply their understanding to the content knowledge taught.

### **How is Science Currently Taught?**

Traditionally, science has been taught as a subject for which students memorize facts with no real understanding of the true nature of science (McBain, 2011; Mamlok-Naaman, 2011). Instead of teaching students to understand the value of scientific information in their lives, science is still commonly presented as a collection of terms, concepts, ideas, and theories to be memorized in a rote manner (McBain, 2011). In order for a student to be successful in many science classrooms, they need to possess reading skills, mainly connected to comprehension and adequate knowledge of vocabulary and fluency (McBain, 2011). By having such a heavy influence of vocabulary, students that have difficulty reading tend to have a limited vocabulary, and therefore struggle with the subject matter of science.

There are many other factors that impact students' limited amount of understandings in the field of science, which can be caused by a lack of instruction of science at the elementary level. In fact, "most students do not have a realistic picture of the nature of science and scientists" (Mamlok-Naaman, 2011). With such misconceptions, students may see scientists as stereotypical "white males" working in isolation or as intellectual beings that live in an alternative universe, of which we have to memorize formulas used by these scientists. Additionally, students do not like science because they are afraid to cope with formulas or mathematical computations (Mamlok-Naaman, 2011). Students are under the impression that if they are not good at math, they are not good at science, which is not true. By focusing primarily on the memorization of facts and formulas in teaching science, teachers have effectively "turned-off" many of their students to the content area of science.

### **Building on Student Curiosity to Create Foundational Scientific Knowledge**

Students are naturally curious about the world, much like scientists they "tend to personify objects, or describe processes and natural phenomena in emotional terms and build in a conceptual world, which is adjusted to their own experiences" (Mamlok-Naaman, 2011). Teachers need to embrace this natural curiosity and utilize it in the classroom, especially in science if they want their students to acquire a more accurate perception of how science is carried out in the real world. Teachers should also devote more time to the area of science, because the "more students are exposed to subjects in the spheres of science and technology, the more likely they will become interested and involved" (Mamlok-Naaman, 2011). At the elementary and middle school levels, twenty minutes a day (and sometimes only once a month or so) is not enough time spent teaching

science to adequately prepare students to be successful in the field of science. Also, students do not always get the opportunity to perform experiments and conduct observations, which can also make learning science difficult. The price of lab material can be expensive, making schools limit the amount of experiments students perform. When students transition to the secondary schools, they will have science daily and will be expected to engage in science labs, activities and so forth. If they are given opportunities to engage in authentic science investigations early on students can use the information they gather from the experiments to support their thoughts (Mc Bain, 2011). Thus, it is necessary for teachers to spend more curricular time during the early years of schooling teaching students to interact and affiliate with science in similar ways to how science is actually carried out by scientists.

As schools move to Common Core Standards and NGSS adoption, students are expected to be able to support their thoughts with prior knowledge and experiences. According to the state's common core standards, "students need to be able to gather, comprehend, evaluate, synthesize, and report on information and ideas, conduct research in order to answer questions and problem solve, with support from a range of print and non-print materials" (Core Standards, 2013). Having a goal of engaging students in regular scientific discussions with supportive data can facilitate their ability to analyze the validity of information and form their own conclusions. The thoughts and experiences students encounter can then help them make connections to other content areas and support critical thinking in the Common Core Standards. Therefore, it is important for students to propose questions and formulate their own understandings to make their experiences valuable and worth sharing when making a scientific claim. Students need a

strong foundation to form their understandings upon, and science needs to be equally valued at all levels of education, so students know how to participate in the field of science before they reach the secondary school instruction.

### **Students and Social Networking**

Social networking is defined as “web-based services that allow individuals to construct a personal profile, articulate users whom they share a connection with, and view their list of connections and those made by others within the system” (Boyd & Ellison, 2008). Therefore in order to participate in social networking, users need Internet access and an electronic device, like a smart phone or computer, to do so. Teenagers are notoriously active users of social networking: in 2012, 95 percent of American teens were online and 81 percent of them used social networking sites (Forte, Dickard, Magee, & Agosto, 2014). Therefore, when most teenagers use the Internet, they also start to engage in social networking as well. When students participate in social networking, they develop cognitive work, affective work (sharing emotions), and social work (Luehmann & Tinelli, 2008). Students are able to collect evidence from other opinions and shared resources, to support their own opinion, and communicate their thoughts. These are some advantages for students to participate in social networking.

In some cases, the amount of social networking is seen as an epidemic. Children born after 1990 are seen as living in social networks such as Facebook and Myspace (Kirschner & Karpinski, 2010). They sleep with their phones next to them and stay up till late hours texting, Twittering, and searching through Instagram. It is almost as if the youth today are treating their multitasking hand-held gadgets like extensions of themselves compared to baby boomers, this means they are more likely to own social

networking profiles, to connect to the Internet wirelessly, and to post personal videos online (Barker, 2012). The youth bring their phones and electronic devices everywhere they go, and when they do not have it, they feel like part of them is missing. The word used to describe this generation is Homo Zappiens, because they are a new group of learners that develop understanding on their own, making their understanding through inquiry, discovery, networking, experimenting, collaborating, self-regulating, organization, and problem-solving focused on others (Veen & Vrakking, 2006). It is teaching and learning (Bosh, 2009). Therefore it is imperative that educators tap into students' interests, which can be done by tapping into the popular social networks students are using. Integrating social networking sites needs to become a seamless part of the curriculum and not just an additional means of communication (Lester & Perini, 2010). As students engage in social networking, they need to have the desire to do so, or they will not use or interact with others.

There are several different types of social networking sites: Instagram, Facebook, Myspace, Twitter, to name a few. Teens indicated that they had different networks on different social networking sites, and this differentiation between audiences help dictate which site to use and for what purpose (Forte, Dickard, Magee, & Agosto, 2014). Facebook is mainly used for discussing daily life, school, and fashion, whereas Instagram is used for romance, family, and self-appearance. Proving that students use different social networking sites for different purposes, is dependent on what the site has to offer. While engaged in social networking: 76.6 percent discussed school and 56.1 percent discussed school activities (Forte, Dickard, Magee, & Agosto, 2014). Students spend about seven hours a day, five days a week, at school, so discussing where they spend

most of their time makes sense. Since students are talking about school, schools can embrace and provide opportunities for teachers to utilize social networking in a responsible and structured manner to support academics (Taranto & Abbondanza, 2009). The discussions students have can be academic based and promote learning in and out of school. Teachers can also use social networking sites to send communicative messages related to the content and student understanding, which helps students receive information in a timely manner (Lester & Perini, 2010). This allows students to be aware up upcoming events and prepare them to do well in class.

### **Communication with and Between Students**

It is the responsibility of the teacher who wishes to use social networking in academic setting to connect academics to social networking. Academic social networking allows students to learn effectively and productively in an increasingly digital world (International Society for Technology in Education, 2007, as cited in Moorman, 2009). Schools have begun to create their own social networking profiles, so that students and parents can “friend” these pages and receive information about the school (Williamson, 2010). Society uses social networking as a main form of communication to keep updated about friends and family. Therefore, the students feel right at home using social networking because it gives them the opportunity to interact in a way that comes naturally to them (Taranto, Dalbon, & Gaetano, 2011). Students are already using the site so they know how to find users, send messages, and make comments. Social media provides educators with the exciting new opportunity to connect with students in a manner that continues to provoke thought and discussion outside of the classroom setting (Abe & Jordan, 2013). Teachers then have to promote discussions through social

networking, so students are thinking about the content they learned in school. The Facebook experience is quite different than simply accessing an instructor's class website as students and teachers can easily connect with one another based on their school affiliation through virtual social networks (Mazner, Murphy, & Simonds, 2007). So when using a site such as Facebook, students are familiar with how to use it to communicate with their friends and family, making contacting the teacher and other users easy. In past studies when students were engaged in academic social networks, 92 percent of the participants reported that their overall experience using the class social networking site was positive, and 97 percent of them indicated that they had a positive experience in the course (Hung & Yuen, 2010). Therefore, social networking can make learning the content enjoyable and therefore promoting engagement in the material.

**Communication among students.** Social networking improves relationships among students, which would motivate students to attend school because they would have something to discuss online. Many social networking sites are used by students for the purpose of communicating with friends and classmates (Hansen, Childress, & Trujillo (2010). Youths tend to have more interaction online networking with friends than in person (Mikami, Szewo, Allen, Meredyth, Evans, & Hare, 2010). Students tend to base their popularity on how many "friends" or "followers" they have on their social networking site. Wright and Li (2011) investigated pro-social behavior and found that a person who is likely to act in pro-social ways around people in personal settings is almost just as likely to do the same online (Alloway, Horton, Alloway, & Dawson, 2013). Therefore, it is important for individuals to engage in positive conversations both inside and outside social networking, so that they can build relationships with their peers. Often,

adolescents feel they have lost their voice or are unheard by authority figures in their lives, so social networking gives their voice a sense of power and importance (Williams & Merten, 2008). On social networking, students are able to post how they feel and be heard by those that are following them, so the more followers they have, the greater number of people hear what they have to say. Since students are spending roughly seventy hours a week in contact with friends, they often lack contact with important adults in their lives, motivating them to communicate entirely with their peers (Strom & Strom, 2012). The problem with students only communicating with their peers is that they never learn how to communicate with adults, which they will have to do in the workforce. Therefore social networking with peers is important and so is face-to-face interaction, so students know how to interact.

**Communication with teachers.** Effective communication between student and teacher is just as important as communicating with peers; students need to understand what is being said to them at the same time teachers need to know what students are saying. According to Gehlbach, Brinkworth, and Harris (2011), “teacher-student relationships are among the most fundamental factors of successful schooling.” As students progress through elementary school, students are directed to talk more to their teachers when they have a misconception or are struggling to understand a concept. As soon as students reach junior high school, the amount of time each student has with the teacher is limited. During early adolescence, “students often look to non-parental adults for social bonds, yet as they transition into middle school, their teacher-student relationships tend to be less personal” (Gehlbach, Brinkworth, & Harris, 2011). No matter the age, students need to have a positive relationship with their teacher. According

to Gehlbach, Brinkworth, and Harris (2011), “teacher-student relationships can be associated with important student outcomes”. Therefore, communication with students is important for student success. The students who “form weaker social bonds with their teachers, are more likely to feel disengaged or alienated” (Murdock, 1999 as cited in Gehlbach, Brinkworth, & Harris, 2011). Therefore, there are implications to students who have poor relationship with their teachers.

Students talk to teachers for multiple purposes. According to Myers and Huebner (2010), there are four different purposes that students elect to communicate with their instructor:

“Students who communicate for the relational motive are interested in learning more about their instructors on an interpersonal level. Students who communicate for the functional motive do so to obtain information about the course or assignments. Students who communicate for the participatory motive are interested in becoming actively involved in classroom discussion and responding to instructor comments. Students who communicate for the sycophantic motive desire to make a favorable impression on their instructors”.

Not all students have the best relationships with their teachers. It is important for students to build teacher-student relationships; therefore steps must be taken to improve relationships (Gehlbach, Brinkworth, & Harris, 2011). Teachers need to be the one making the effort to communicate with the students, rather than communicating to or communicating at the students. By teachers using social networking, like Facebook, it is an attempt to communicate with students in their territory (Mazner, Murphy, & Simonds, 2007). Social networking is how many of our students communicate, so communicating

with teachers through the same media will be easier for many students. As described by De Abreu (2010), media literacy is an open doorway for communication between student and educator.

**Communication with teachers through social networking.** Social networking with the teacher has other advantages for students. First, communicating “with students via social networks has the potential to enhance students’ perception of the educator’s approachability” (VanDoorn & Eklund, 2013). When students are more willing to approach their instructor, they are more willing to ask questions and seek clarification of concepts, which can lead to student’s achievement and a higher performance in the course. Also, teachers found it easier to talk to students who they saw on Facebook, because they could also communicate through social networking if needed (Bosch, 2009). Second, research shows that students who feel connected to their school, who think their teachers are fair and caring, are less likely to perpetrate any violence including electronic aggression (Williamson, 2010). Therefore, the students will enjoy their experiences in school and in the class, which will motivate them to do well in the course. Also, when teachers are willing to listen to their student’s interests and learn about them, the more responsive is the teacher to their students’ abilities, interests, and needs (Mottet & Beebe, 2006). When a student knows the teacher cares, the student will be more likely to care for their academic success in the class. Third, most students’ responded positive feelings when the instructor tended to respond quickly, rather than waiting for a response via e-mail (VanDoorn & Eklund, 2013). For that reason, students are able to get their questions answered early and complete their assigned work without the misconceptions clouding their understanding and completion of work. Another study stated that teachers also

received prompt feedback to questions posted on the site (Wang, 2013). Last, social networking allows teachers to cheer and post encouraging words that can be readily reached by students, motivating them to succeed (Hoff, 2014). Therefore, social networking with students can positively impact students' performance and engagement in the course.

When teachers participate in social networking with their students, the teacher is engaging in behaviors similar to their students. Social networking is well established as a part of students' existing communication (Knight & Rochon, 2012). In past studies, when the teacher engaged in social networking, two thirds of the students felt the teacher was more friendly, patient, and willing to help. Students in academic social networking environments performed higher on the quizzes assigned, improving the student academically. Educators can promote social networking helping and guiding students by communicating and building connections through peer and teacher collaboration (Taranto & Abbondanza, 2009). The more positive communication on social networking, the more students will have a positive outlook on the course and their communication with the teacher and their peers.

Typically, the conversations between teachers and students are about coursework and assessments. In a study conducted by VanDoorn and Eklund (2013), where students and teacher engaged in social networking, "student communication with the instructor was mainly assessment driven." Students will not typically be off topic when the instructor sets up guidelines of social networking use. Also, the conversations that take place through social networking can happen anywhere at any time (Hung & Yuen, 2010). Social networking also allows participants to engage in whatever manner they choose

through different online modalities (Abe & Jordan, 2013). Social networking is available at all points of the day, making communication easier between all users, which can be beneficial to both teachers and students.

### **Social Networking Forms a Community**

Students in junior high spend a lot of time trying to “fit in” and have a large group of friends. By establishing a community, which is a group of people that share a common interest, hobby, or affiliation, students can develop a sense of belonging. (Bosch, 2009) As social networking becomes more popular, students are using “social networking as a public communication so that their other friends could also see what they are writing, which is effective in maintaining group communication” (Bosh, 2009). Social networking would promote a community because it provides a group of like-minded people to converse and receive feedback (Hoff, 2014). When groups of people converse and build relationships, individuals of that group develop a sense of belonging and importance in the world. They also develop a deeper understanding of their interests.

Some benefits of an online community in the class setting are that the teacher can easily access a large group of students. Social networking through Facebook, users share their personal interests and educational resources serve as leads to dynamic knowledge sharing and seem to be one way to promote classroom community (Hung & Yuen, 2010). Many of the groups formed on social networks appear to serve the purpose of building a community, “keeping members of specific academic programs in touch with one another via the website, or for information sharing with people who meet in ‘real world’ environments” (Bosch, 2009). Students form connections at school, and then they interact with their classmates and peers on social networking after school, on the weekends, and

during breaks. In past studies, teachers reported that it was effective to have an online community “where students could converse and collaborate, and where I [the instructor] could support and enrich their learning” (Moorman, 2009). Students need support inside and outside their classrooms, and will benefit from having the opportunity to ask questions. Therefore, using Facebook as a learning tool and environment seems to offer a win-win situation, because it allows students to develop learning communities on and off campus (VanDoorn & Eklund, 2013). Two communities can be formed, one at the school campus, and one online, which would reinforce relationships among students.

Findings in past studies have showed that social networking and building a community online has a positive influence on students’ performance in school. According to a study performed by Hung and Yuen (2010), results showed that students in social networking perceived a higher sense of community and reported greater motivation in achievement of goals. In many classrooms students are under direct instruction, where the students must sit at their desks and listen to their teachers all day, where there is little time for collaboration. By using social networking, students have a tool in which they can engage in discussions and collaborate with their peers. Findings show that social networks are increasing and the majority of users report feeling as strongly about their communities online as their real-world communities (Strom & Strom, 2012). What this means is that students continue to cultivate relationships with the people in their community, which they associate with, even after school. Researchers have found “a connection between students’ ability to stay connected with a community and their use of social networking sites” (Lester & Perini, 2010). Such results indicate positive influence on self-efficacy, which promotes interaction among users. Self- efficacy leads to

“positive influence on social trust, indicating that in an online community, individuals possess the confidence to interact with others, make new friends, and establish a good sense of social trust among those with whom they interact” (Wu, Wang, Liu, Hu, & Hwang, 2012). When students socialize and form a community online, they transfer these relationships they form online to relationships they establish at school. Students often discuss the same content online that they discuss in the classroom and at school through social networking.

### **Building Self Identity and Social Networking**

At the junior high-level students are just starting to develop a sense of who they are as a person. At the junior high level, as students receive more responsibilities, they are more susceptible to peer pressure, and are focused on what their friends think about them. In some studies, young participants reported low group identity, and tended to seek social compensation via social networking site use (Barker, 2012). Younger users of social networking will be more likely to interact with more users, even if they personally do not know that individual, and base their popularity off how many “friends” or “followers” they have. Adolescents are more interested about the interactions that take place through social networking. Students with profiles are curious and reflect their interactions through new opportunities and intellectual utility (Rouis, Limayem, & Salehi-Sangari, 2011). Using the Internet to establish identity, adolescents are being exposed to an “unrestrictive laboratory setting for adolescent identity experimentation as they seek to understand how they fit into the world around them” (Williams & Merten, 2008). Students get to interact with one another and build an understanding of what their interests are, who their friends are, and how they want to be perceived by their peers.

Often, while students are engaged in online conversations and navigating through the Internet, they are faced with images of what others think they should be. The important aspect of social networking is that students have to remain positive by encouraging the development of attitudes of others and not become fazed by what others think (Twenge & Campbell, 2009 as cited in Boswell, 2012). This can be hard for some students, because they focus on what others think of themselves, and not what they think of them. In order for social identity to be positively impacted, the user must receive encouraging and thoughtful feedback from others and reflect on professional dilemmas and events. (Luehmann & Tinelli, 2008). By constructing feedback often, students can think about how they would want to be responded to, enforcing positive feedback among users. It is important to ensure that students have the opportunity to embrace their creative aspects and not be weighted down by the opinions of others (Hourigan & Murray, 2010). On their profile students can express themselves however they want and can promote themselves in ways they deem appropriate, instead of what they think others want to see as. The more resistance one has against peer pressure to be a certain way, the stronger sense of identity will develop. Research has shown that social identity and self-esteem are beneficial to the student's psychological well being, which helps students build the confidence in personal understanding, which can transfer to the students' academics as they make connections between their own lives and their content (Barker, 2012). The goal is for students to use social networking to build a strong sense of self, which they can transfer in their school performance.

## **Facebook and Student Use**

Socializing through the Internet, especially through the use of Facebook, has become increasingly important in the lives of society. Facebook is known as the largest social network (Goodwill Community Foundation, 2013). Facebook is also the most popular social networking site (Wu, Wang, Liu, Hu, & Hwang, 2012). Facebook's popularity has to do with the fact there are users all over the globe who are as young as thirteen years old. According to Protalinski (2013), there are 1.9 billion monthly active users of Facebook. Also, there are 874 million mobile users and 728 million daily users of Facebook (Protalinski, 2013). Mark Zuckerberg created Facebook in 2004, while he was enrolled in Harvard (GCF LearnFree.org, 2013), with the objective for the site to serve as a social networking where users can post comments, pictures, and join groups with similar interests. Once starting as a site solely for college students to network, users now range in ages of thirteen years of age or older. On Facebook users also have the ability to socialize through messages. As commented by GFC LearnFree.org (2013), there is not one way to use Facebook. Users can decide to connect only with a small amount of users, or broaden their connections with a wider array of users. Some activities on Facebook include updating one's personal status, chatting, or uploading and tagging music or photos (Wang, 2013) Through using Facebook, "friends" of that user can see what that user is doing based on what is posted. Results in past studies have demonstrated that students use Facebook for different reasons: 84.6 percent used the site for chatting, 66.2 percent view photos, 64.6 percent used the site for commenting on friends' posts (Wang, 2013). These three activities tend to be the most popular use for Facebook.

Overall, Facebook has been a useful tool for companies to work on advertising, and for people to connect with family and friends without the obstacle of distance.

Past studies utilizing Facebook in education, found that students spend on average 116.87 minutes per day on Facebook (Wang, 2013). That is close to two hours that students are spending socializing, and looking through their friends' profiles. Students access Facebook during breaks, at home, and sometimes during class, even when cell phone use is prohibited. Forty-four percent of the students in a study recorded that they checked Facebook several times a day, and 21.5 percent of those stated they checked the site daily (Forte, Dickard, Magee, & Agosto, 2014). It is almost as if the youth today is addicted to Facebook.

Facebook also has aspects that can be very distracting to its users. The site is used for marketing purposes, so the site is full of advertisements. Even in the Facebook privacy statement, it is clearly stated that a Facebook user's interests are mentioned in their profile will be used to determine what advertisements are displayed on their home page (Bosch, 2009). Therefore the advertisements the user sees will draw the attention of the user. Online advertisers on Facebook pay as much for advertising space as they do for commercial slots on primetime TV (Flemming, 2008). Companies know how popular Facebook is and how many hours people spend on the site, which is why they are willing to pay such high costs to be advertised. There are also online games Facebook users can engage in, such as Candy Crush and Farmville. On these games, users earn points for the amount of time they spend in the game, and receive points by competing and donating between users. Wang (2013) stated that students who play games on Facebook are more

likely to have lower grades. Students are spending time playing games rather than engaged in their studies.

However, Facebook use is not all negative. Many students indicated that they use Facebook to start projects, collaborate, and share links/information (Wang, 20103). Students are able to communicate with one another easily, and when links are shared, they open a direct link to the shared site. Facebook might be the tool needed to stimulate collaborative student led learning, and having open communication with one another (Bosch, 2009). Students have been using social networks to communicate outside of school, so therefore collaborating and pawning ideas off each other would be easily and accessible to do. Through Facebook teachers can post homework assignments and coursework notes for easy downloading (Nicole 2007, as cited in Bosch, 2009). Students can then be reminded what they need to do, so they have less missing work. In one study, student reflections stated that they were already spending lots of time on Facebook, and that being able to check class-related material while at the same time engaging in personal communication, was useful. In general, students who used Facebook for various academic purposes were more engaged in the material (Bosch, 2009). Even though the students might be distracted by the class or teacher's designated Facebook, but they have to be cognitively invested in learning the material in order for the resources to have a positive influence.

### **Instagram and Student Use**

Another social networking site that has become more popular in the last couple of years is Instagram. Currently Instagram has 150 million active users (Hernandez, 2013). The difference between Instagram and Facebook is Instagram is a Socila Network

website on which users can post and other users can like or comment on the posted clips. The features of Instagram are more simplistic; the feeds feature the posted videos and images of anyone the user decides to follow. Facebook is more dynamic in the ability to post videos, pictures, status updates, and also features advertisements and promotion links. The application can be downloaded on a Smart Phone Application or accessed directly through the Internet. Instagram is defined as a “fun and quirky way to share your life with friends through a series of pictures. Snap a picture with your mobile phone, then choose a filter to transform the image into a memory to keep forever” (Instagram, 2014). The idea of Instagram started at an art school, where Mark Krieger and Kevin Skystrom created the application in 2010 (Phillips, 2013). Users can access the application through smart phones, tablets, and devices the Internet can be accessed.

Often young adults and companies make profiles to see how many people they can get to follow them. By following a profile, the user receives updates anytime the individual they are following updates a new photo. They are then able to like or comment on the new recently updated photo. Also, in 2012, Instagram added a function where photos can be shared from Instagram onto other social networks including Facebook (Instagram, 2014). Users of Instagram can easily share the photos between different social networks.

Using Instagram in the classroom has been done before. Some recommendations to use Instagram in the classroom include the use of the social networking website in photography and art classes, in sharing photo essays, writing narratives based on pictures posted, and sharing information related to the school community (Morrison, 2012). Another website recommended using Instagram in a classroom to promote digital

storytelling, grammar practice, sequencing, writing prompts, metaphors, or sharing art (Spencer & Sergersten, 2012). To focus on science teachers can request for students to post a picture of: ecosystems, abiotic factors, an element, acids, air pressure, catalyst, carnivore, habitat, precipitation, and other key words in science (Lepi, 2013). Students then are making connections to the content to their daily lives, giving the content a sense of importance. Teachers can also see student understanding through the pictures the students take.

### **Social Networking and Cyberbullying**

Cyberbullying is one major negative factor associated with the use of social networking. Cyberbullying is defined as the intentional act of online/digital intimidation, embarrassment, or harassment and it has been a growing problem in middle and high schools in the United States (Mark & Ratliffe, 2011). The problem with online harassment is that students tend to be connected to their phones at all times. In the past, students' torment would subside when they went home, but socializing online and having access at any point is not allowing students to escape the torment (Dempsey, Sulkowski, Nichols, & Storch, 2009). With the constant pestering, students can be influenced and be faced with having to make psychological adjustment (Dempsey, Sulkowski, Nichols, & Storch, 2009). That is why students need to be aware of cyberbullying, and know how to cope with the hurtful words that might be shared. Through cyberbullying, users can be exposed to name-calling, threats, rumor spreading, sharing personal/ private information, social isolation, and exclusion (Mark & Ratliffe, 2011). The factors that students can be exposed to can influence how people treat them online, but also transfer to how students are treated at school as well. As, students become part of these online environments the

more reinforcement they will need because as a participatory culture the importance of their growth is also based on how they treat others (De Abreu, 2010). When students engage in negative behaviors online, they will not grow relationships and will weaken their own self-identity. Also, when people engage in cyberbullying, they tend to display negative attitudes towards others outside of the online environment as well, disrupting relationships online and at school.

The importance of cyberbullying in school is because it has been a growing problem that teachers need to address, especially if social networking is being utilized in the class. In past studies, students believed that their teachers were aware of the occurrence of cyberbullying, and that 83 percent of the teachers that were aware would stop the digital harassment (Mark & Ratliffe, 2011). It is important for teachers to keep the trust of their students, and not take cyberbullying lightly. Females tend to be more involved with cyberbullying incidents, which is likely due to the need for peer acceptance and maintenance of social relationships. Many girls use of the Internet to stay connected with friends, which puts them at a higher risk of being a victim to online bullying (Mark & Ratliffe, 2011). Also, 48 percent reported of all students under the study stated that they did not know the identity of their cyber bully (Mark & Ratliffe, 2011).

Cyberbullying can also be done through fake profiles, making it hard to determine who is doing the harassment. Students need to be aware of the implications associated with cyberbullying, so that they know how those that fall victim to cyberbullying feel.

### **Implications of Social Networking on Students**

Not everything social networking has to offer impacts students in a positive way. Despite the popularity of social networking, schools have been reluctant to embrace the

technology because of concerns of misuse (Taranto & Abbondanza, 2009). The students are not always engaged in positive conversations and action on social networking sites. In a study conducted by Lockyer & Patterson (2008), an issue that received attention is the blurred lines between personal and professional roles of the teacher through social networking use. If students are engaged in social networking with a class, school, or teacher they should remain professional and academic based. Teachers should consider professionalism when using Facebook (Mazner, Murphy, & Simonds, 2007). Therefore, teachers should not post personal information, and keep the presence as a teacher even through the Internet. The teacher impairs their professional image with the Facebook profile (Mazner, Murphy, & Simonds, 2007). Students can find out personal information and might find out information that might make the student not like the teacher. If a teacher decides to use social networks, they must make decisions about how much information to disclose because they might lose credibility. Friends can also disclose information through “tagging”, which also can cause problems for the teacher. Some districts limit employees having social networking accounts (Williamson, 2010). Campuses that seek to engage students and faculty in social networking may consider alternative profiles and groups separate from students’ socially oriented profiles (Lester & Perini, 2010). That is why if academic social networking would be used the teacher should have a separate account that they talk to their friends on, and one that they talk to parents and students on. If school personnel find teacher postings to be unprofessional, they can request the teacher’s removal from their school (Griffin & Lake, 2011). Therefore, teachers need to watch the content that they post on any social networking sites.

Students also do not consider the implications they personally might face for social networking use. When posting personal content online, students do not necessarily recognize that their decisions may still influence them ten years down the road (Abe & Jordan, 2013). Things that are posted on social networking sites are never truly deleted. Many students have a hard time knowing how to distinguish writing in school versus writing on the Internet. They need to make distinction between writing typically done on Facebook and academic writing (Moorman, 2009). The students need to know that formal conversations do not use abbreviations like “lol”, “jk”, or “ur” for “you are”. Though students believe the information they post on social networking sites is “private”, it is not, and when using social networking for school purposes students need to be held to a code of conduct (Flemming, 2008). That code of conduct should be clearly outlined and explained to all users of the social networking site. Also, what students don’t consider is when they are applying for a job in the future. The stronger the graphic statements are the more likely they are to influence the hiring decisions (Griffin & Lake, 2011). Just as mentioned before, the information posted is never truly deleted. Students need to be aware that the things they post now can haunt them in the future.

Students have worries when social networking with their teacher. Student concerns are that their teachers need to respect their students’ privacy (Mazner, Murphy, & Simonds, 2007). Teachers should not go onto their students’ sites and get involved in the students’ personal business. Students in most studies have reported being concerned that faculty would use their Facebook to “get gossip or spy” on them (Abe & Jordan, 2013). That is why if teachers elect to use social networking with their students, they need to keep their distance socially. In addition, some students were afraid to discuss

questions about school content in the fear of the teacher perceiving the discussions as cheating (Forte, Dickard, Magee, & Agosto, 2014). That is why the conversations that take place on social networking needs to be monitored, and students need to know what types of conversations are permitted. Teachers also need to not assume that students are cheating, and promote academic conversations through the social networking site.

When starting social networking, in order for the site to be effective, there needs to be a certain amount of followers. One of the main problems with social networking sites is achieving critical mass: building a substantive user base that is self-sustaining over time (Conole, Galley, & Culver, 2011). The teacher also has to make sure to be constantly updated and post information the students would find valuable. There is another issue surrounding the use of Facebook and social networks because of bandwidth availability, with the large amounts of students accessing the sites will slow down the entire network (Bosch, 2009). That is why using a social network that must handle large quantities of users; must have boosters to speed up the network. Just because the site may not frequently have problems, students and educators need to establish a back-up plan in the case of technological failure (Abe & Jordan, 2013). That is why not all assignments can be given via social network. Second, students engaged in social networking are enabled to overcome embarrassments of face-to-face communication because they “afford asynchronous, noncommittal, playful interaction in which management of ‘face’ and negotiation of flirting, misinterpretation, and innuendo is more controllable” (Livingstone & Brake, 2010). Interpretation is an important factor in online socializing, because intonation is not always read through text. Therefore, implications of using technology for social means must be understood before engaging in social networking.

Lastly, the use of social networking has proven to be distracting to some students. Many students acknowledge that they find social networking like Facebook, to be totally distracting and they noted that they could not quit visiting the site because they like it and keep in contact with others (Rouis, Limayem, & Salehi-Sangari, 2011). Students would rather socialize with their friends through social networking, than access information related to their class. Technology use, even when used for educational purposes, is still perceived as entertainment (Bugeja, 2006 as cited in Bosch, 2009). Technology and the use of social networking serves as motivation, but also can make it hard for students to focus on the material presented. Parents are also concerned because students are spending a lot of time on the social networking sites. According to parents' part of the study by Strom & Strom (2009), children are spending so much time in their social networking communities and not spending time with the family. Therefore, parents might not promote the use of social networking for school purposes, because they are already trying to limit the amount of time students are using the site.

### **Academic Achievement**

Student's academic achievement is defined as "grades, test scores, graduation rates, and acquisition of skills, which tell how much a student has learned or mastered in understanding" (Kadel, 2008). It is important for students to completely understand the content and not just memorize the information for a test. The most common way student achievement is measured is through tests, which also requires test-taking strategies. As student's performance on student achievement improves, students are more likely to apply their knowledge to real life situations and participate in academic conversations. Often students achieve academic success through completion of assignments and

studying the content prior to an assessment, such as a test or quiz. Behaviors necessary for school success include: finishing work, turning in homework assignments, and paying close attention in class (Yonezawa, Jones, & Joselowsky, 2009). It is hard for students to recall information that they learned in previous lessons, so review is key to academic achievement. The idea of studying is difficult for students, because students need to develop studying techniques that work for them. Some students read notes or the text over again, make flash cards, or complete study guides in order to review past material. Academic challenge entails the “amount of time and effort students devote to studying and other academic work: preparing for class, reading assigned book and assignments” (Kuh, Kinzie, Schuch, and Whitt, 2005, p.45). It is important for students to have access to material, which teachers need to provide for the students, to make themselves academically successful. Teachers cannot assume students know how to study. Also, students cannot be expected to achieve unless they concentrate, work, and invest themselves in the mastery of school tasks (Newmann, 1992). Therefore teachers need to give students all the resources required to master the content.

Students today are growing up in an environment where they have access to technology, where they can find out facts and other information. The need to know information is dissipating, and students are relying more on the information they find through search engines like Google. As discussed by Kirschner and Karpinski (2010), students know how to Google, but lack the information skills to effectively find the information they need, or determine how accurate the information they find is. Students still need to be accountable to know the information themselves. As the state of

California moves to Common Core, students will need to know how to explain and state evidence, which they will not always have the Internet to help them.

Some studies have reflected a positive influence of social networking on student achievement, while others have identified a negative correlation.

**Academic achievement and social networking.** Social networking and academic achievement have had a correlation. A high level of cognitive immersion on Facebook will decrease students' academic achievement (Rouis, Limayem, & Salehi-Sangari, 2011). Part of the reason for a decline in academic achievement is how students are spending their time. Students are spending long hours engaged in social networking, which in past studies, have shown to have a decrease in academic performance/grades. According to Paul, Baker, and Cochran (2012), as time spent on social networking increased, the academic performance of the students seemed to deteriorate. Students are spending their time socializing, rather than using their time learning about the content. Then in a study by Hansen, Childress, and Trujillo (2010), students that participated in social networking had an average GPA of 2.87, whereas the students that did not participate in social networking had an average GPA of 3.17. Therefore, it is important to show a significant difference between users of Facebook, and their overall academic performance in the class. In another recent study, over involvement or obsession in with social networking by students have a negative influence on academic performance (Korschner & Karpinski, 2010). Part of students lack of academic achievement is that the more hours student are on social networking sites, the more they procrastinate in getting started on assignments, resulting in late submissions which can affect the student's performance in the class (Alloway, Horton, Alloway, & Dawson, 2013). Many students

would rather talk with friends, so they keep putting off assignments until it gets too late to complete the assignment. Additionally, students tend to be on Facebook, or other social networks, socializing instead of using the resources provided. In a study conducted by Rouis, Limayem, and Salehi-Sangari (2011), even with the use of a class social networking site, students get distracted from their working memory, making it difficult to focus on their homework effectively. The aspects of other users and friends using the social networking site can draw away from the material presented to help students understand the content. Some researchers believe that social networking cannot positively influence academic achievement, but some of the conclusions are premature, and there is more to be studied (Hansen, Childress, & Trujillo, 2010). Therefore more research can be done, especially focusing on social networking with a focus on student's acquisition of academic content.

Social networking has also proven to have a positive influence on academic achievement. Through digital dialogue and sharing of ideas and concepts, teachers and students can broaden their horizons and explore new ways to think and construct meaning (Hoff, 2014). Through dialogue among peers, the concepts become comprehensible and this in turn will positively influence student achievement. Also, the discussions held can be assigned as homework, making homework less drudgery (Taranto & Abbondanza, 2009). Students therefore will have less missing assignments while being able to listen and read others' thoughts and perceptions about a concept. Only when we improve how we teach and create more engaging settings for youth, can student voices be heard and academic achievement will improve (Yonezawa, Jones, & Joeslowsky, 2009). One of the best approaches to hear many student voices and thoughts is through social networking.

Through the inclusion of social networking in education, the goal is for students to create, navigate, and engage in acceptable discourse while maintaining a focus on an academic topic or theme (Taranto & Abbondanza, 2009). Having a focus is important to academic success, so students do not get distracted. Therefore students need to remain focused and maintain time management skills. By students learning how to minimize the amount of time they are engaged in social networking, they are learning time management. Results in past studies have indicated that social networking has improved time management skills, which leads to improved academic performance (Paul, Baker, Cochran, 2012). In order for time management to develop, students learn how to juggle time socializing with friends, and when to stop and get to schoolwork. In another study, high school students that used Facebook for over a year had significantly higher scores in working memory, verbal ability, and spelling than those that did not use Facebook at all or less than a year (Alloway, Horton, Alloway, & Dawson, 2013). Students are interacting with others, which allows students to communicate through text, making spelling an important factor. Last, social networking has proven to attract academically entitled individuals because social networking serves as a vehicle to receive attention and praise (Boswell, 2009). By being able to publicly advertise their achievements, students are more likely to continue to make the effort to continue to receive praise. There are some benefits of social networking on student achievement, even when the social networking is not academically based, which would only improve the student's performance more so.

## **Student Motivation**

Motivation is what a person will attempt; yet ability is defined as what a person can do (Pintrich & Schunk, 1996 as cited in Heafner, 2004). When students engage in material that is deemed motivational, students become involved with the work they are completing and have a desire to finish the work as well. If a task is fun, requires a moderate amount of effort, and reasonably challenging, the students will classify the task as important (Heafner, 2004). When students are confused, challenged, or bored, they may be turned away from the task at hand. Students need to possess the competence, autonomy, interest, and relatedness to truly be motivated (Center on Education Policy, 2012). Also, students need to be capable of finishing the task as well. In a study conducted by Heafner (2004), students that were motivated to complete a task were less likely to interrupt and engage in inappropriate behaviors. Therefore, if students enjoy the subject discussed, students will independently develop the desire to complete the assigned task. Now in cases where they must work on their own, without the help from their classmates or teacher which can be challenging for students (Drury, Hoferichter, Jagenow, & Raufelder, 2012). Students have to build the desire and passion to complete the assignment on their own, which is difficult for some students. Motivation also improves student's self-worth, pressuring students to feel better about themselves and the work they complete (Heafner, 2004). Through motivation students will be more likely to complete the task, and enjoy the work they are doing as well.

Additionally, motivation can influence several other factors and how students approach school in general. Some aspects that can be influenced by motivation include: how they relate to teachers, how much time and effort they devote to their studies, how

much support they seek when they are struggling, how much they attempt to engage or disengage, and how they perform on assessments (Center on Education Policy, 2012). Therefore, students overall performance and behavior is influenced by their motivation to be in school. Students who feel they have limited capacity, unlikely to succeed, or lack of control over the outcomes, will not be academically motivated (Center on Education Policy, 2012). Students need the confidence to possess the drive to want to be in school and do well.

**Student motivation and social networking.** Since students spend so much time engaged in social networking, by using it with academics, students should want to participate in the learning of the subject. Much of the literature discusses that social and motivational outcomes tend to decline in middle school as students are trying to develop a sense of self-identity (Gehlbach, Brinkworth, & Harris, 2011). Therefore, students in secondary schools need as much motivation as possible to focus in school. The freedom to publish and share ideas creates a learning environment that empowers and motivates both teachers and students (Yan, 2007). Social networking gives students a sense of voice and the freedom to share their thoughts, because they do not always have that opportunity during class. The social networking sites also motivate students that might not be comfortable to ask questions and participate in online discussions. In one study by Taranto, Dalbon, and Gaetano (2011), the discussions held on the social networking site were “amazing”, because many students that did not participate in the classroom were active participants. Therefore, the students who lack confidence, abilities, and motivation to be part of class discussions may be more willing to participate through social networking. Other studies have found that the use of Facebook reveals a significant

relationship between higher motivation to learn and more effective learning (Wang, 2013). Students enjoy using Facebook, and social networking, so by using a tool the students enjoy they will be more motivated to participate. Also, by instructors engaging in social networking with the students, the students will develop higher motivation, partially because the student has positive attitudes about the instructor (Mazner, Murohy, & Simonds, 2007). The stronger the relationship students have with their teacher, the more likely they will be motivated to participate in the social networking with the class.

### **Student Engagement**

Engagement is another key component to students' success in school. Engagement stands for active involvement, commitment, and concentrated attention, in contrast to superficial participation, apathy, or lack of interest (Newmann, Wehlage, Lamborn, 1992). Students need to be participating in class in order to be considered engaged. There are different forms of engagement. Emotional engagement refers to the role of students' affect in schools and classrooms "including interest, boredom, happiness, sadness, and anxiety" (Yonezawa, Jones, & Joselowsky, 2009). In order for students to be physically engaged, they have to be emotionally engaged as well. It is the teacher's responsibility to find ways to engage students that will allow students to make physiological investment in learning (Newmann, 1992). Therefore, teachers need to use a variety of tools to engage all the learners in their classroom. The students that are disengaged tend to disrupt the classes or fail to complete assignments (Newmann, 1992). When students are distracting other students, other's engagement in the content is negatively influenced. It is important for teachers to develop a more nurturing and engaging learning environment that promotes cognitive growth, and incorporate

instructional practices that are student centered (Heafner, 2004). When students' needs and interests are considered, the more engaged the student will be, therefore improving student academic success as well.

**Student engagement and social networking.** Social networking is a way for students to be connected in a society that is disconnected in face-to-face interactions. Students enjoy working with technology because they find it more engaging (Heafner, 2004). Therefore by using social networking, students get to use technology and a form of communication they are used to, keeping the students engaged in the material. The development of students as self-directed learners who take responsibility for their own engagement, is an important benefit of using social networking sites (Knight & Rochon, 2012). In a study by Hansen, Childress, and Trujillo (2010), found that students' use of social networking sites or traditional technologies with instructors was significantly related to positive levels of academic engagement. Students are growing up with technology advances, so using social networking and technology would engage the students more. A multidimensional and critical view of engagement one that considers the interplay among setting, identity, and critical youth voice, can go a long way in improving youth engagement in schools (Yonezawa, Jones, & Joselowsky, 2009). Social networking gives students the power of voice and self-identity, which will keep them engaged. Another study found that social networking sites can increase engagement by making the learning appear to be social or a part of regular activities, such as updating his or her Facebook status (Lester & Perini, 2010). Students are using social networking on a daily basis, so by checking updates and accessing resources via class social networking sites, it will be a routine action for the students. In addition, the use of social networking

encourages students to interact with one another and may increase engagement and interest in the course content (Abe & Jordan, 2013). Not all students have the opportunity to socialize in class, so they can communicate through social networking. The students are able to converse with their instructors as well when they have a question or misconception. Students using social networking have the opportunity to have their questions and misconceptions addressed, which in turn improves their engagement and performance in the class. Given certain types of social networking use engagement in the real world, which students use to construct their engagement in academics (Kuh, 2009). Therefore, engagement is important for students' success in school and in the real world, because they need to be able to give all their attention and possess drive to complete tasks they encounter in life.

### **Approaches to Integrate Social Networking in Schools**

When teachers decide to participate in social networking, they must enforce guidelines and policies. The first step is to develop a clear policy with a focus on educationally valuable use of the Internet (Williamson, 2010). The content that will be used on the social networking site is only educational based, making it less distracting for the students who are participating in social networking. It is essential to “establish rules and guidelines with the students, as the online experience is an extension of the classroom” (Taranto, Dalbon, & Gaetano, 2011). Therefore, the students will know how to interact with one another through the Internet, making a positive environment for students to learn from and access. It is important to have appropriate consequences for inappropriate use of the Internet or social networking sites (Williamson, 2010). Students will then know that there will be consequences for not using the site appropriately.

Parents, teachers, and school administrators should be familiar with the social networking sites and monitor students' use, which would enforce responsible use (Williamson, 2010). By parents, teachers, students, and administrators being involved, they will all be included on the updates about the events occurring in the classroom. Also, if parents and administrators are participating, students are more likely to stay positive and avoid harsh treatment of others.

The best advice is to have a separate class account that students can access, which is not the teacher's personal social networking account. In past studies, respondents, which were all teachers, demonstrated mixed feelings of incorporating personal and work related social networking, 50 percent would want to use an existing social networking account. Teachers would want to use familiar social networking sites, because that is what their students are using, but the mixed feelings are from the fact they do not want their students seeing all their personal information. The teacher needs to become the provider of information, or the 'vessel of truth', which in turn will create gate keeping mentality (De Abreu, 2010). This means the teacher still needs to remain professional and use the same reputation that is used in the classroom. Teachers that exhibit a relaxed personality on social networking, with informal photographs and entertaining messages, and yet are strict in the use of social networking for academic purposes, may violate student expectations resulting in negative effects on the students (Mazner, Murphy, & Simonds, 2007). Students are getting mixed signals when teachers are relaxed through social networking, but strict in the classroom, so the teacher expectations are unclear. All content published must be ethical and professional, so that the conduct of the teacher is not impaired (Griffin & Lake, 2011). Students will then know that social networking with

the teacher is for academic purposes only, but still be motivated to participate because it is through a site they are familiar with and already using.

### **Chapter Summary**

Recent studies have identified the need for improving student academics, engagement, and motivation in secondary schools. Students in secondary schools spend hours engaged in social networking and feel disconnected to the content taught in school (Moorman, 2009). By forming a social network for students to access, students will build a classroom community and promote communication between teacher, students, and among students themselves (Bosch, 2009). Building a classroom community requires a relationship with adults, connection between students, and class and school wide events (Kohn, 1996, pp.114). Through the building of a classroom community, students are more likely to be motivated and engaged which will increase the student's academic achievement (Knight & Rochon, 2012). By having an academic focus on the content, students are guided by the teacher to have a virtual constructive learning environment through the social networking (Taranto & Abbondanza, 2009). Furthermore, community building via social networking allows students to learn how to collaborate and engage in discussions by asking one another questions (Lester & Perini, 2010). According to the constructivist theory, tools, digital media, artifact construction, and reflective discourse are the basis of new knowledge construction (Ostasheewski, Moisley, & Reid, 2011). Therefore, students must be given the tools for success and allowed to decide how and when they implement social networking tools to build communities (Hung and Yuen, 2010). Teachers need to be assured that by participating in social networking with students, social networking will benefit their understanding, keep them engaged, and

motivate them to complete assigned work. That way, teachers will know that their utilization of social networking tools in their practices can indeed enhance student learning.

Some studies have indicated a negative impact on academic achievement due to the amount of hours spent on Facebook (Korschner & Karpinski, 2010). While other studies have found a positive correlation between student performance and their participation in Facebook. In this study, students were engaged in strictly academic social networking with seventh grade science curriculum. The results of the study can contribute to the understanding of social networking for different purposes (e.g., academic vs. purely social). The field of science is important, however students often receive little instruction in science prior to junior high, which influences students' engagement with and motivation towards the subject (Mamlok-Naaman, 2011). Thus, students need to have more opportunities to use social networking tools to help them engage in school science.

Research reviewed here indicates that the use of social networking is on the rise in society. There are several studies that suggest a positive correlation between social networking use and student achievement, motivation, and engagement. Very little research has been conducted on how social networking can be used for academic purposes and how it could influence student understanding in a given content area. In order to define the effectiveness of academic based social networking on student learning, this study was carried out in a seventh grade science classroom. For the purpose of this study, all three aspects: a) academic achievement, b) engagement, and c) motivation were explored.

## Chapter 3

### Methodology

#### Purpose of the Study

The purpose of this study is to examine how social networking influences student achievement, engagement, and motivation in science. The study investigated this research topic by seeking to answer the research question: *How does class social networking influence student achievement, engagement, and motivation in the seventh grade science curriculum?* In order to answer the research question in this study a comparison study was devised. In this study, two aspects of students' use of social networking were compared. To compare students' different types of uses of social networking, two student groups were formed: one group was comprised of those students that were following/using the class Facebook and Instagram accounts versus the second group of students that were not participating or do not have access to the social networking. Based on the students in the classes, it was expected that about half of the students would not have access to Facebook or Instagram. Facebook and Instagram were used in the study because they are the two most popular social networking sites used in the student population at the school under study, which was concluded by the researcher by talking with the students about social networking prior to the experiment. The other component under investigation was to examine student performance before and during participation in the class social networking sites. The class social networking site was used during the third quarter of the academic year and was compared to the two previous quarters that social networking was not used.

## **Participants**

This study took place in a seventh grade classroom located a suburban area of Los Angeles. There were 100 students included in the study, all of whom have the researcher, the individual conducting the study, as their science instructor. The students had the same instructor the previous two quarters. Each child underwent 45-minute instruction, five days a week, with this instructor. The curriculum was taught for the length of one quarter, which is equivalent to 11 and a half weeks. Students were then allowed to participate in the class social networking after school through their personal devices, tablets, or computers. Parents were also allowed to follow and participate in social networking. This allowed students that might not have Instagram or Facebook themselves, or under the age of 13, to still have access the information posted on the class sites, through their parent's accounts.

Based on the Terms of Usage for Facebook and Instagram, users must be a minimum of 13 years of age (Facebook, 2014; Instagram, 2014). In order to participate in social networking, students had to abide by the following:

- a. Thirteen years olds can use the student's personal account or parent's account under parental supervision.
- b. Twelve years olds participate with parent's accounts under parental supervision.
- c. If a student became the age of 13 during the study, they were allowed to start following the classes' social networking sites with their own profiles.

Students that elected to follow the classes' Instagram or Facebook page and participated in the links are extra time, and occurred outside of class time. The amount of minutes each student elected to devote to extra material, that can be accessed through the

social networking, was entirely up to the students and completely voluntary. All students in the study were between the ages of 12 and 13 years of age. Fifty-five percent of the students that were part of the study were female and 45 percent are male. No student personal information was released at any point of this study, and student sample work excludes the student's name. The name of the school is not released to ensure confidentiality of students included in the study. All students that turned in a consent or assent form were part of the study.

### **Ensuring Student Social Networking Safety**

At the start of the study, students were sent home with consent forms for themselves and their parents to sign. Students had the opportunity to opt out of the study, but not out of the curriculum. In class, students did a reading of what the study is about and student questions were addressed and answered. At that time, students were introduced to the Facebook and Instagram page, so they are aware of its existence. Next, students entered a discussion about what behavior is tolerated on each of the social networking sites, such as students may not post any comments directed toward another student, all comments must be relevant to the course. After the discussion, students learned and discussed what cyberbullying is, how to avoid cyberbullying, how to report cyberbullying or inappropriate behavior, and the lack of tolerance with such conduct. Students were reminded that there was no grade incentive or extra points to be rewarded to those that decide to follow the social networking sites or participate in the study, therefore they did not have to be included to please the teacher or protect their grade. There was no penalty for not being part of the study, so there was no pressure to be part of the study. Students were allowed to follow or stop following at any time of the study,

so the decision to follow did not have to be immediate, so students had time to think it over and make a decision. Students did not have access to the social networking sites during class time. Also, the social networking was not discussed in class, so those that are not participating did not feel left out or pressure to join the classes' social networking sites. If student had questions or comments, they had to address it to the instructor before or after class privately. Whoever decided to follow the Instagram or Facebook pages composed the social networking user group, where those that elected not to participate in the social networking made up the comparison group.

Since users of Facebook and Instagram must be 13-years-old, two options to participate in social networking with the class were set up. All students that decide to participate in social networking with the class were allowed to through their parent's accounts with parental supervision. The accounts by the 12-year-old students and 13-year-old students using their parent's accounts, required parents to sign the consent form, that they created the account and that they supervised social networking usage of their child. For 13-year-old students that had their own accounts, they were allowed to follow the classes' Facebook or Instagram with their own personal accounts. Through the consent form parents gave permission for the student to use the social networking sites. The ages of the students were included on the assent form, which is the form students gave permission themselves to be part of the study, which was used to ensure that the participating accounts match those that were 13-year-old participants.

As the instructor and teacher researcher it was necessary to create an Instagram and Facebook page that students were allowed to follow. The social networking sites were different from my accounts. The sites were created so students had to request to follow

each site, therefore the students had to possess, or have access to, an Instagram or Facebook themselves. On the sites, the instructor posted reminders for homework or upcoming test, quizzes, or assignments. All students are directed to record the upcoming assignments in agenda, so all students knew what homework was assigned and when quizzes and testes were. There were also posts with links to other websites that have videos, review games related to the content taught, and sites with relevant information to the content taught in the school day. The links were also written on the board in the front of the room, so all students have access to the sites. Social networking also allowed the students to engage in discussions about the content, through posts that proposed a question was asked by the instructor. Last, the social networking permitted students to comment or message the instructor, so that their questions they formulated at home regarding assignments or content could be addressed quickly.

Student academic achievement was assessed based on test scores and overall grade in the course. Student motivation and engagement was measured through a survey, which was part of the curriculum, and an optional interview with the students. Motivation was measured by the number of missing assignments students had, because if students are unmotivated they are less likely to do the assigned tasks. The numbers of missing assignments were compared between the students that were participating in the class social networking to those that were not participating. In addition, the number of missing assignments students participating in social networking were missing in the prior quarters where social networking was not used was analyzed. Interviews with ten students took place, five students that participated in social networking and five that did not, were conducted to develop qualitative data regarding student motivation and engagement.

## **Procedures**

The first day students engaged in a discussion about cyberbullying, what cyberbullying is/looks like, and understood that inappropriate behavior will not be neither allowed nor tolerated on either Facebook or Instagram. Students were told to only make comments that are relevant to class or the topic discussed, and that all other comments would be removed. Students decided to follow either social networking site once school ends and they have access to their own social networking sites. Through the students' own social networking profiles (if they were thirteen years of age), they could follow or "friend" the classes; social networking sites. Students that are twelve years old had to use an account that their parents created and were supervised while using. Since students accessed the site from their personal devices, and not during class time, students that chose to not participate did not feel pressured to join or participate in social networking, which students were not penalized either way. Facebook and Instagram were not part of the daily curriculum.

The posts that took place on Instagram and Facebook served as reminders for the students to complete an assignment or homework. There was links to websites that have review games based on the content taught in class. If any news or upcoming events in the community were relevant to the content taught, that information was also posted. There were three to five posts a week. Discussion questions about the content taught were addressed, where students are able to give input. Every Monday the homework for the week was posted. The social networking allowed students to ask questions to one another or to the instructor through comments or messages. Students had access to the social networking sites on their own time, not during class time. The reminders only should have

taken a couple minutes to access, the links to videos and games should have taken no longer than fifteen minutes, unless students elected to play the game or watch the video more than once. Non-participating students were allowed to e-mail or ask the teacher questions outside of the social networking sites. The information was also posted on the whiteboard and discussed orally in class; so non-participating students knew that assignments were given.

Students who elected to not be part of the study were not penalized in any way. Their information about student achievement, motivation, and engagement was excluded from the data collected. Ten students elected to not participate. During instruction periods, students attended class for forty-five minutes, five days a week, for a total of eleven and a half weeks. All work assigned in class were conducive to the study to the degree that it impacted the students' overall scores in the course. Students would have class work and homework assigned. Students also took quizzes and tests, which allowed the instructor/researcher to assess how much they learned in the course. At the end of the eleven and a half week segment, students engaged in a comprehensive Benchmark exam regarding learned science content from the beginning of the quarter (the start of the study). Parents and students had to give consent/assent for the use of assignments and grades for the study. However, these assignments were part of the curriculum and were not optional, so all students whether they were participating in the study or not completed the assigned tasks. No matter how students participated in social networking the same information was posted, and the same information was available to the student that did not participate in social networking through memos written on the white board. All students had the same experiences in the classroom. Students test scores, overall grade in

the course, and number of missing assignments were analyzed. The scores in the class and on the collective exam (Benchmark) were then used to analyze student achievement. The missing assignments were used to measure motivation, because it was believed that the more motivated students were to learn the more willing they would be to complete class assignments. Daily instruction was the same for those participating in the study and followed one of the social networking sites, those participating without social networking, and those that elected to not be part of the study.

After the eleventh week concluded, all students participated in a survey, which was inclusive to the curriculum, and focused on motivation and engagement. Some survey questions were relevant to the students who decided to follow the Facebook or Instagram pages. If a student still participated in the study, but not the social networking, they could skip the questions if they did not pertain to their form of participation in the study. The questions featured on the survey were general, so all students could respond. Students that elected to not be in the study would still take the survey, and used it as a reflection of their own learning. Surveys were collected in the order that students finished them and were placed in two separate baskets based on their participation or nonparticipation of social networking. See Appendix A for the survey.

Five students that participated in the study and followed Instagram or Facebook were randomly selected for an interview. Another five students that did not follow Instagram or Facebook were included in an interview process. In both cases, names of individuals in each group were randomly selected by picking the seventh paper collected was used to request for that students participation in an interview. The first five papers were the students selected to be part of the interview process. Interviews were held during

lunch or after school in the classroom, therefore not being an influence during class time. Students that went through the interview process would expand on their thoughts regarding student engagement and motivation. No audio recording occurred during the interviews; only notes by the instructor/researcher were taken. The interview process took approximately twenty minutes per student interviewed. See Appendix B for survey questions.

### **Chapter Summary**

Through this study, the data collected determined students' level of achievement, motivation, and engagement. The data collected was compared among the students that participated in social networking as well as students that did not participate in social networking. In addition, the students that participated in social networking data from previous quarters were compared to the quarter in which social networking was used. From the data collected, student achievement was measured through overall grades and percentages. Student motivation and engagement was measured through the number of missing assignments, survey results, and interview responses.

## **Chapter 4**

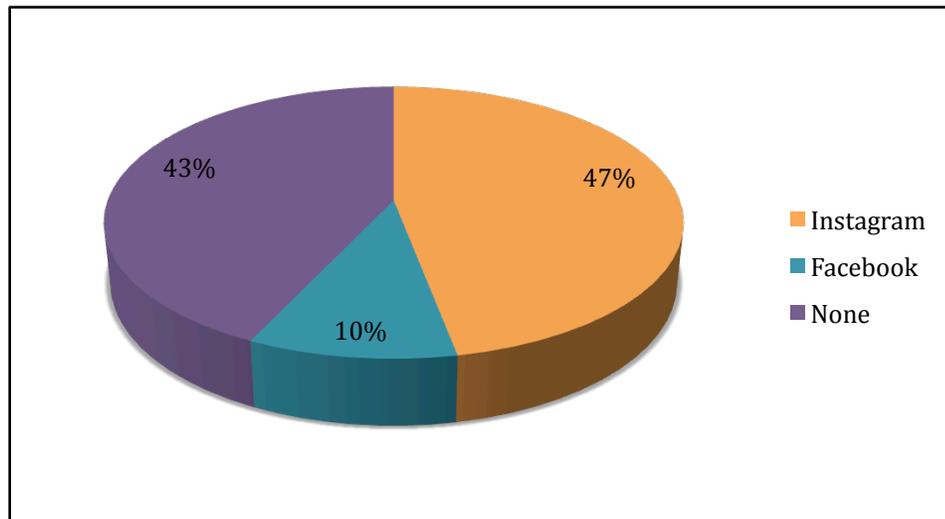
### **Results**

From the data collected, student achievement, engagement, and motivation were analyzed. The findings in this chapter are organized based on what aspect was analyzed and how the data were collected. First, student participation is presented to show the number of students in the sample that participated in social networking and through what method: Instagram or Facebook. Next, the ways that social networking was implemented to engage students academically is presented. From there, student achievement was analyzed based on previous grades and percentages in addition to student performance on an end-of-the-quarter cumulative exam. Survey results were then analyzed and broken down based on how students responded on each question. These results indicate student motivation and engagement in science. Lastly, interview responses from individuals that participated in social networking versus those that did not participate in social networking was examined, compared, and presented.

#### **Student Participation in Social Networking**

Results were gathered from a group of 100 students between three class periods (A, B, and C). The information gathered was organized based on overall scores, students that participated in social networking and students that did not participate in social networking. Students had the opportunity to participate in social networking, and what form of social networking they wanted to participate in (Instagram or Facebook). Students who participated in social networking made their own account if they were older than 13, or followed through their parents' profiles with supervision, due to the terms of use of Instagram and Facebook. Forty-seven percent of the students involved in the study

followed on Instagram, 10 percent followed on Facebook, and 43 percent did not participate in social networking. Therefore, most of the social networking that took place during the study was through Instagram.



*Figure 4.1: Distribution of Student Participation in Social Networking*

The information was gathered during the span of three quarters (which are approximately 12 weeks each). The third quarter is when social networking was introduced to the students who chose to participate. Academic achievement, motivation, and engagement were measured through this study. Through the span of the study, 11 and half weeks, the social networking sites were active. Both Instagram and Facebook had the same information posted on the sites. Figure 4.1 indicates the methods of which students participated in social networking during the third quarter.

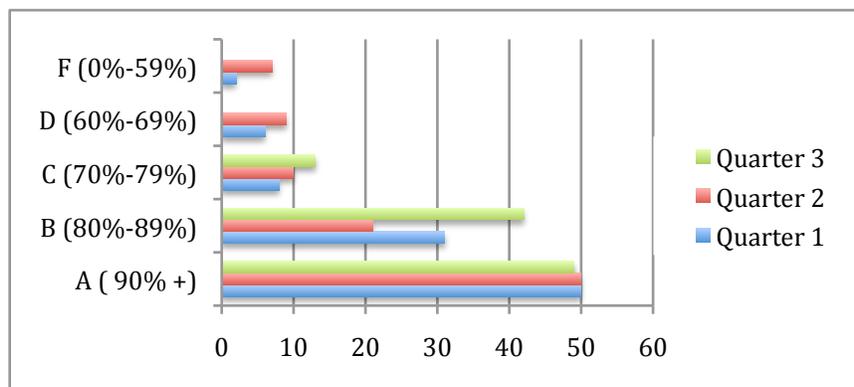
### **Teacher Postings**

On Mondays, homework of the week would be posted. Tuesdays or Wednesday a discussion question would be posted. Friday a couple fun facts relevant to the content would be posted. If there were a deadline to a project or upcoming test, reminders would be posted. In order to help students study, online review game links were posted on the

social networking sites. Students also used the social networking as a way to communicate with me, the instructor. Students would also leave comments to the information posted. All the content posted was academic and related to the material taught in class.

### **Academic Achievement and Student Social Networking**

Data to record academic achievement was collected from student performance in the class through tests scores, overall percentages, and overall grades. Each quarter students were assigned a grade for their performance for the duration of the 12 weeks. Overall in the class, each quarter the grade distribution demonstrated a positive shift towards higher grades. The number of F's and D's decreased during the third quarter, which is when social networking was introduced, and more A's, B's, and C's were assigned. The number of A's during third quarter dropped slightly, but there was a significant increase in the amount of B's and C's. Overall, the class demonstrated a positive outcome third quarter, whether they participated in social networking or not.



*Figure 4.2: Grade Distribution Each Quarter*

Figure 4.2 indicates the grades students received each quarter. Third quarter is when social networking was introduced. Not all students participated in social networking. This figure includes all students that participated in the study, even if they

did not participate in social networking. In the next diagram, Figure 4.3, the data is broken down based on social networking participation, which indicates how social networking influenced their grade for the quarter. The students that participated in social networking had a higher amount of A's in the third quarter than the group that did not participate in social networking. The third quarter there was a higher amount of C's in the group that did not participate in social networking. In addition, during the third quarter there was a significant increase in the amount of B's in both the group that participated in social networking and those that did not participate in social networking.

Figure 4.3 also shows how the students that participated in social networking changed over the course of the three quarters. The group that did not participate in social networking third quarter had an increase in D's and F's during the second quarter, then the third quarter, there was no D's and F's and more students received a grade of C or B. Less students in the group that did not participate in social networking received a grade of A, compared to the previous two semesters. Whereas the group that participated in social networking seemed to stay consistent to the scores they received the previous two quarters. There were a couple less students that received an A during the third quarter, when social networking was used, compared to the previous two quarters. Also, there were a couple more students who received a B during the third quarter. For the most part the students who participated in social networking had grades remained the same for all three quarters, whether social networking was used or not.

Participated in Social Networking 3<sup>rd</sup> Quarter

Did Not Participate in Social Networking 3<sup>rd</sup> Quarter

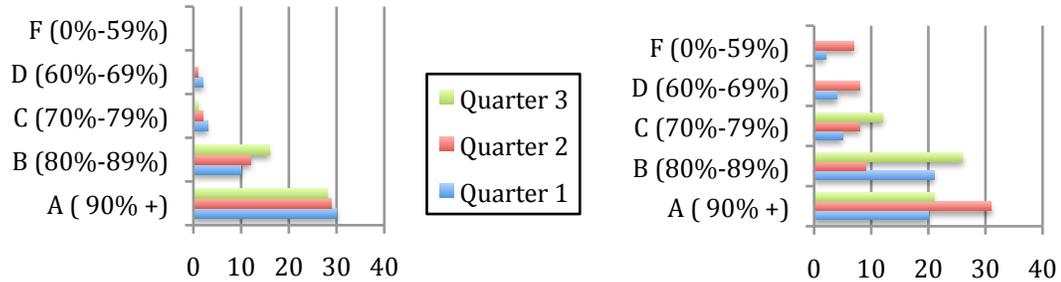


Figure 4.3: Grade Distribution Each Quarter Based on Social Networking Participation

Data was then separated to show the grade change between quarters based on social networking participation during third quarter. There was a significant difference between the group that participated in social networking during the third quarter, and those that did not participate in social networking, and the amount of A's achieved. The students who chose not to be a part of the social networking had an increase in the amount of B's and C's, and a significant decrease in F's and D's the last (third) quarter. The students who were part of the social networking received higher grades than those that chose not to be part of the social networking.

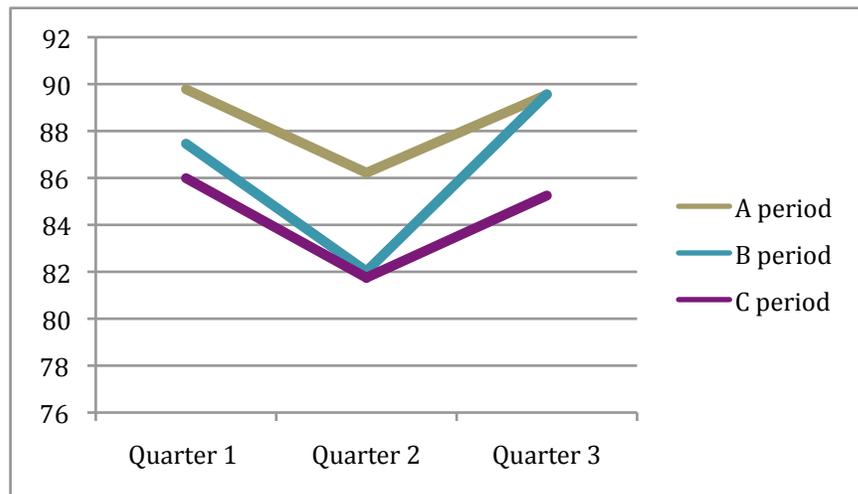
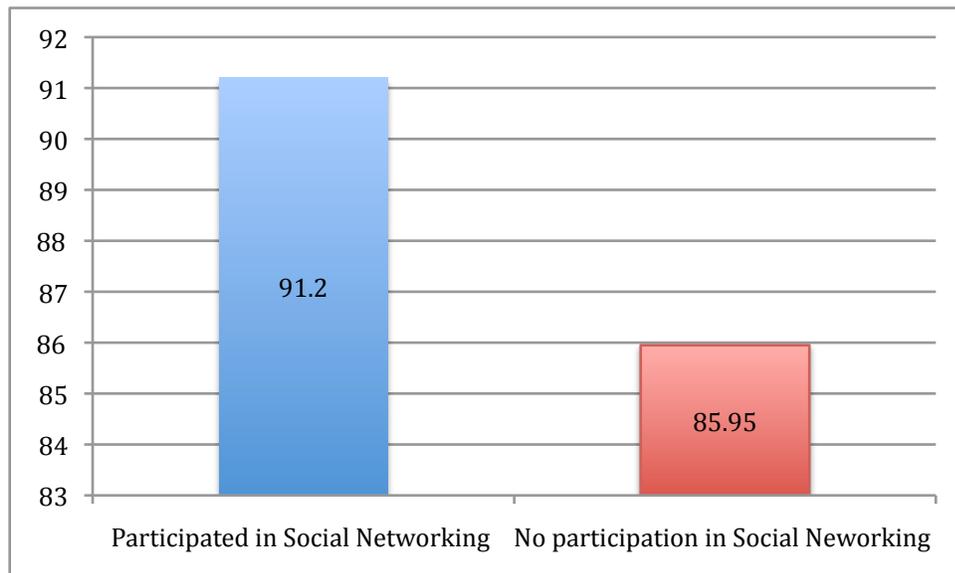


Figure 4.4: Grade Percentage Between Class Periods

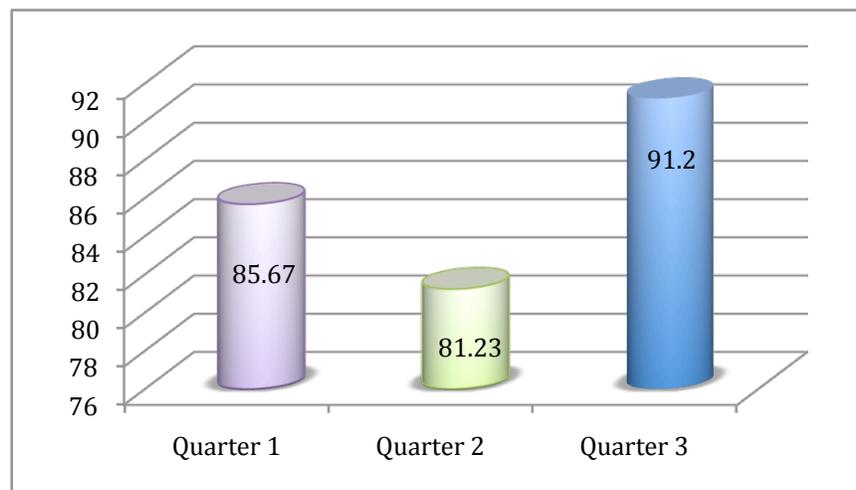
Figure 4.4 indicates that there was a decrease in overall class percentages between the first and second quarter. During the third quarter, when social networking was used, the overall percentage increased compared to the second quarter. Period A and C had similar averages the first and third semester, but B period experienced a significant increase compared to the previous two semesters. Period A and B had the same average, in 89 percent range, during the third quarter.

The students in each period performed better in the third quarter, than they did in the second quarter. A period and C period did slightly worse than they did the first quarter. B period demonstrated a significant increase in academic achievement through average class percentage of overall points for the third quarter. B period also had the highest amount of students who participated in social networking. 72 percent of the students in B period participated in social networking third quarter, where A and C period was about 50 percent.



*Figure 4.5: Average of Overall Grade Percentage Comparison with Social Networking Participation*

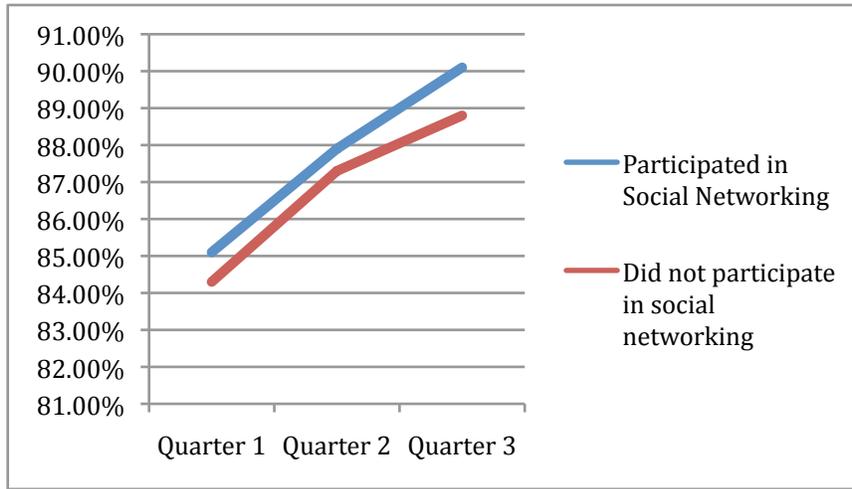
Figure 4.5 shows that students who participated in social networking had an average percentage of 91.2 in the third quarter. Students who did not participate in social networking had an average percentage of 85.95. Therefore, the students who participated in social networking had an average higher percentage than the group that did not engage in social networking. There was a 5.25 percent difference between the group that participated in social networking third quarter and those who decided not to participate in social networking. The information collected was averaged for all three class periods, for the third quarter.



*Figure 4.6: Average Grade Percentages for the Students that Participated in Social Networking*

Figure 4.6 indicates that students who participated in social networking had an increase in overall percentage during the third quarter, which is when social networking was used. The first two quarters, no social networking was used. The students who did not participate in social networking third quarter were excluded from this data collection. The third quarter demonstrated a 5.53 percent difference from Quarter 1. There was a

9.97 percent increase between Quarter 2 and Quarter 3, for the students who participated in social networking the third quarter.

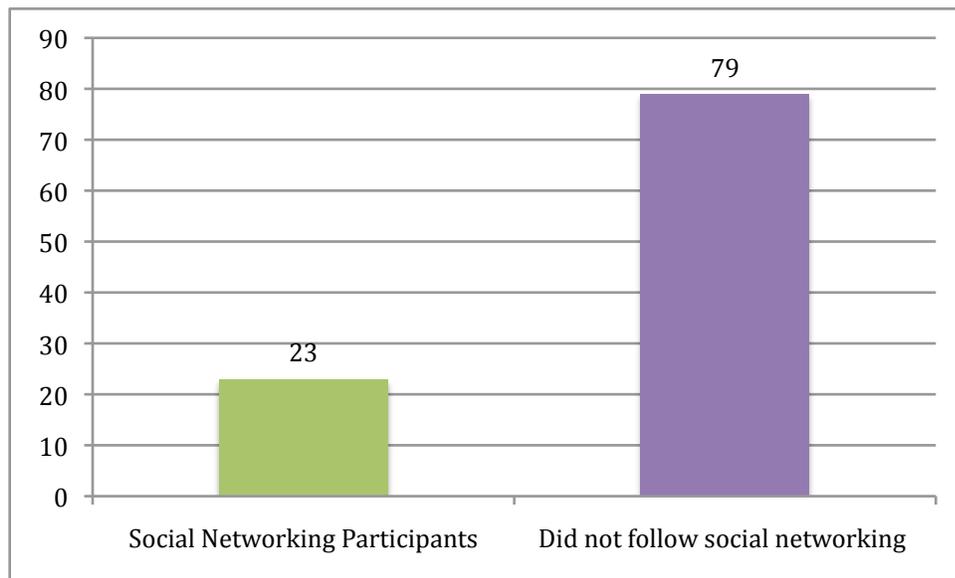


*Figure 4.7: Average Benchmark Percentages for the Students that Participated in Social Networking*

Figure 4.7 indicates that at the end of each quarter; students took a collective exam on all the material they learned for the quarter. Between the first and second quarter, students seem to have the same growth, whether they participated in social networking third quarter or not. The third quarter, the students who participated in social networking increased, close to the same slope as they did between the first and second quarter. The data collected seem to indicate a steady rate of increase between the quarters. The students who did not participate in social networking, demonstrated an increase in slope in the third quarter, compared to the difference in Quarter 1 and 2. The slope between second and third quarter is not as larger for the non-social networking group. Therefore the students who participated in social networking had greater growth, than the group that did not participate in social networking. Overall, both groups demonstrated an increase on average percentage for the benchmark third quarter.

## Engagement and Motivation through Student Social Networking

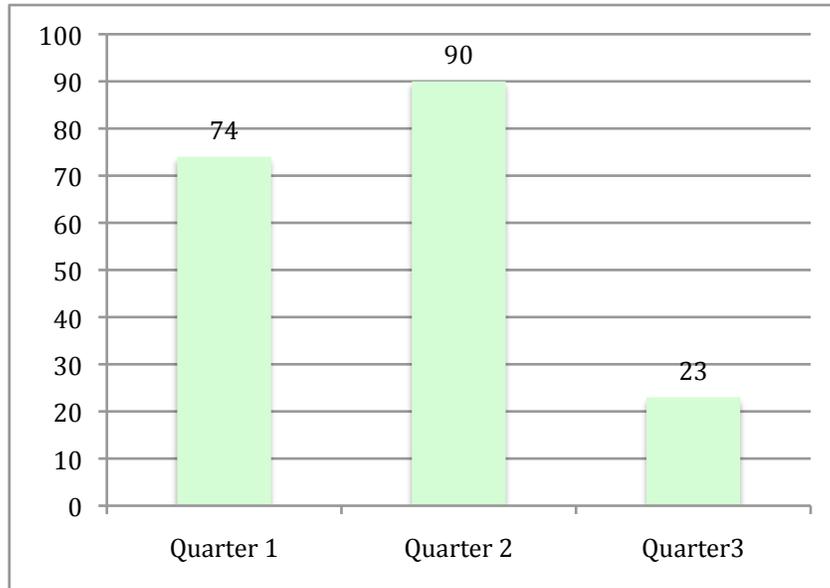
Engagement and motivation was measured by the students' ability to turn in assignments and through results of the survey and interview. By students turning in assignments for the quarter, it shows that they are motivated to complete the assigned work and engaged in their learning. When students feel disconnected or motivated to complete assignments, their grade will be negatively impacted.



*Figure 4.8: Number of Missing Assignments Quarter 3*

Figure 4.8 indicates that students had less missing assignments when they participated in social networking. Missing assignments was used motivation and engagement, because a student has to be motivated to complete the work. Also, if the student is engaged, they are more likely to be on task during class, and complete the work, therefore not needing to take the work home for homework. The group that decided to not participate in social networking had 79 missing assignments during Quarter 3, between the three class periods. The group who participated in social networking had 23 missing assignments in the third quarter. The deviation between the two groups is 56

missing assignments, which is 60 percent more for the group that did not follow either social networking site.



*Figure 4.9: Number of Missing Assignments Each Quarter for the Students that Participated in Social Networking Third Quarter*

Figure 4.9 indicates that the students that decided to participate in social networking third quarter demonstrated a significant decrease in the number of missing assignments compared to the first two quarters. The information collected are only those that participated in social networking third quarter, those that did not participate in social networking are not included in Figure 4.9. The first quarter the students had 74 missing assignments, between all three class periods. The second quarter, there were 90 missing assignments. When social networking was used during third quarter, the students only missed 23 assignments. There was a 67-assignment difference between Quarter 2 and 3. Between Quarter 1 and 3, there was a 51-assignment difference. Instead of continuing the trend of increasing the number of missing assignments, the number of missing assignments decreased significantly.

## Student Survey Results

The students in the study also completed a survey that recorded information in relation to student engagement and motivation. Each table records what percent of each group responded a certain way.

<i>Survey Question: On average, how much time did you spend working on science assignments (or studying for science) a night?</i>					
	1 ½- 2 hours	45 min-1 hr	30-45 min	10-15 min	0 min
Participated in Social N.	2%	17%	30%	49%	2%
Did Not Participate in Social N.	0%	2%	19%	40%	40%
Difference	2%	15%	21%	9%	38%

*Table 4.1: Time Engaged in Science Learning Outside of the Classroom*

Based on results of the results of the survey, Table 4.1 indicates the students that participated in social networking spent a lot more time engaged in science assignments outside of the classroom. Most the students who participated in social networking third quarter, 43 percent of the students in the study, stated that they would spend 15 – 45 minutes on science assignments outside of the classroom. A majority of the students that did not participate in social networking stated they spent zero-15 minutes a night engaged in science assignments outside of the classroom. There was a significantly high amount of students, which did not participate in social networking, stated that they spent zero minutes studying science outside of the classroom.

*Survey Question: Were you more willing to complete your assignments than last quarter?*

	Yes	Sort of	No	Less	
Participated in Social N.	50%	36%	14%	0%	
Did Not Participate in Social N.	9%	40%	49%	2%	
Difference	41%	4%	35%	2%	

*Table 4.2: Motivation to Complete Assignments*

Table 4.2 indicates the students that engaged in social networking with the classes' profiles demonstrated higher motivation to complete the assignments. 50 percent of the students in the Social Networking Group felt that they were more willing to complete the assignments. Whereas the group that did not participate in social networking, and a majority of students that stated they were not more motivated to complete the assigned work.

*Survey Question: Did you find the tests more difficult this quarter?*

	Yes	Sort of	No	Less	
Participated in Social N.	0%	19%	35%	46%	
Did Not Participate in Social N.	8%	39%	47%	4%	
Difference	48%	20%	12%	42%	

*Table 4.3: Perceived Test Challenge Level for 3<sup>rd</sup> Quarter*

Table 4.3 shows that by students being engaged in the content, the tests would not be perceived to be as difficult. The students that engaged in social networking did not find the tests third quarter to be as challenging as the last two quarters. The group that did not participate in social networking felt that the tests were not as difficult or a little bit

harder. None of the students that participated in social networking thought that the tests were harder, where eight percent in the opposing group (the group that did not participate in social networking) thought the tests were more difficult.

*Survey Question:* Did you feel less distracted this quarter?

	Yes	Sort of	No		
Participated in Social N.	21%	39%	39%		
Did Not Participate in Social N.	18%	36%	45%		
Difference	3%	3%	6%		

*Table 4.4: Distraction Levels*

Figure 4.4 indicates that there was no significant difference between the two groups. Both groups reported that they were more distracted this quarter than the previous two quarters. In the survey students were allowed to explain why they felt more or less distracted. The most common response collected was people in the class talking. Only two students, both of which participated in social networking, found that social networking was distracting because they would look at others' profiles instead of doing homework. One student explained that she would say she was "checking" assignments but was really looking at her other friends' profiles. Therefore, in that case, the social networking was more distracting for that student, because they would rather stay updated with her friends than see what is going on with the class.

The following table is a combination of those that participated and did not participate in social networking with the class sites:

*Survey Question:* Would you like your teachers in the future to use Instagram or Facebook to post updates and keep in contact with you?

Yes	No	No Opinion
85%	4%	12%

*Table 4.5: Future Academic Social Networking*

Table 4.5 indicates students that participated in social networking with the class during the duration of the study, and students who decided to not participate in social networking, both felt they would benefit if their teachers would use social networking in the future. Only one response of those that stated they would not like their teachers to use social networking, did participate in social networking.

Those that did not participate in social networking had several reasons for not following the class Instagram or Facebook page. Eighty percent of the responses stated they did not participate in social networking because their parents would not allow them to have one, and their parents wouldn't allow them to use their account, if they had one. 15 percent of the responses were because they thought social networking was a waste of time. Last, five percent said they did not have computer access or a personal electronic device to access the class social networking sites.

The following table is only from those that participated in social networking:

*How many times a day did you check the classes' Facebook or Instagram?*

	>10	8-10	5-7	3-4	1-2	Rarely	Never
Participated in Social N.	2%	4%	16%	22%	34%	22%	0%

*Table 4.6: Checking Class Social Networking Site*

Table 4.6 demonstrates that the students that participated in social networking typically checked the classes' sites less than seven times a day. A majority of the students said that they checked the site once to twice a day. None of the students reported that they would never check the site. Therefore, student responses demonstrated that they are active users of the social networking sites.

### **Student Interview Results**

Five students that participated in social networking with the class were selected to go through an interview. Some responses were similar between the selected students, all of which participated in social networking either through Facebook or Instagram. All of the students reported that they decided to follow to stay updated with class events, and would like their other teachers to utilize social networking so they could be updated in those classes as well. Three students stated that they liked the reminders for homework, quizzes, and projects. One student said that he liked the review games the most, and another student said she enjoyed seeing other people's thoughts. Students can then build their own thinking upon the ideas of their peers. All of the students at some point made a comment about how the review games really helped them study and prepare for tests, and that the review games were more engaging than trying to review flashcards, notes, and the textbook. One student reflected on being able to ask questions and have their questions answered by myself (the instructor) or a peer. Another student said "when I was absent, I was able to see what homework I should do, and was able to ask questions about the project. I never had to wait long for a response." Last, all the students reported using social networking was easy because they were already using it prior to when they started following the classes' social networking site. The social networking seemed to

influence the student's ability to remember to do course work and study for quizzes and exams.

Another five students that did not participate in social networking were selected to take part of the same interview. Four of the students reported that they were motivated to complete the work assigned because they wanted higher grades than the previous quarter. The hardest aspect of turning in work was due to absences, the students stated they had a hard time catching up, and then all the work would build up. The three most helpful tools to help these students study were the discussions in class, reading the notes again, and researching on the computer. However, all the students that were interview stated that they would of followed the sites, and think that their teachers in the profession should utilize social networking. Even though these students did not engage in social networking, they didn't think it would be hard to learn how to use the social networking sites.

### **Chapter Summary**

From the data collected, it is apparent that the students that participated in social networking with the class Instagram and Facebook had an increase in academics, motivation, and engagement. Overall, grades in the course for the semester did not change drastically, but class percentages demonstrated that students did better when they participated in the social networking sites. The students demonstrated an increase in motivation and engagement when social networking was used, because the group that participated in social networking had fewer missing assignments. Survey results also showed that students felt like the semester went well and they were more engaged when social networking was used. Even through the interviews conducted, the student enjoyed

being able to easily contact the teacher, the review games, and reminders related to the class. Most the students want their teachers in the future to reach out via social networking, even if they did not participate in social networking during the study.

## **Chapter 5**

### **Discussion**

The findings of this study indicate that social networking with academic purpose can improve student academic achievement, motivation, and engagement in science. Therefore, this chapter provides a discussion regarding how the findings of this study can be used for further research on social networking and science instructional purposes. Limitations and implications of this study are also discussed indicating a need for more research to validate the effectiveness of social networking and student learning. As a final point of discussion, some reasons why the findings of this study are important to the field of education are further explained.

This study was important because it highlighted some of the ways that social networking influences student achievement, motivation, and engagement. The results show that students demonstrated an increase in all three aspects (academic achievement, motivation, and engagement) while using classroom social networking sites. The principle results indicate that students who engaged in social networking benefited mainly from the reminders to complete work. This function allowed them to have less missing assignments at the end of the quarter, which positively influenced their overall performance in the class.

### **Implications**

**Using social networking for academic purposes.** The information gathered in this study is useful for teachers to determine whether they want to utilize social networking with students for academic purposes. The results of this study indicate that using social networking may be a good mediator for academic purposes. Based on

student interviews and survey responses, the study also shows how students would like their teachers to engage in social networking. It was interesting that even the students that did not participate in social networking would still like their teachers to engage in social networking in the future. Another important finding that can be taken from this research is that social networking has to be used in a responsible manner by both teachers and students. Teachers need to post information that is strictly related to the class, so it does not detract from the content being addressed. Students will then be reminded of the material talked about in class, even outside of the classroom setting. Students can also make better connections to the content when they must discuss the information. Social networking can make learning more enjoyable for the students and cause academic success for the students that are participating. Teachers need to embrace the power of social networking and use it for academic purposes, to reach out to their students.

**Using social networking for teacher student communication.** Building connective relationships formed between teacher and student through social networking cannot be underestimated. Through such connections, students are able to easily communicate with their teachers by leaving comments and messages via the social networking site. Many students already use social networking with their peers, so communicating with the teacher is an easy transition. When students have questions and concerns, they can have them addressed immediately, instead of waiting until the next day for a response. The more open communication a teacher has with their students, the more likely it is that students will come to the instructor with a question related to the content. Additionally, they will be more likely to participate and be involved with the learning of that subject matter. With the use of social networking, when a student misses

the work for the day, they can check the site to see what academic work was done for the day, or ask the teacher what they missed. Therefore, teachers using social networking to connect with students can benefit while keeping their students involved in the academic content.

**Using social networking to address Common Core and NGSS.** As many states transition to Common Core and the *Next Generation Science Standards*, students will have to base their responses on evidence from prior knowledge and observations. Engaging in discussions through the social networking sites, will allow students to explain their thoughts more thoroughly. Moreover, students' can also formulate their own ideas more clearly by hearing other perspectives regarding the content being discussed. Communicating thoughts and making connections to other science fields and content areas is a requirement of the new standards and expectations. Social networking is a medium that helps student engage in academic conversations that promote Common Core and *Next Generation Science Standards*, which is also motivating to students because they get to interact online rather than filling out a worksheet or paper.

### **Limitations**

**Teacher social networking limitations.** Several limitations of this study are presented as a basis for addressing essential limiting factors to consider when implementing social networking for academic purposes. The findings of this study may not inclusive for every student in a given classroom or for all classes within a given school site. To capitalize on the academic advantages of social networking, teachers need to be comfortable with various aspects of social networking and willing to use social networking with their students. Teachers using social networking need to provide

students access to social networking and ensure that they are old enough to meet the terms of use for each social networking site utilized. In order to have students involved with social networking they would need personal devices or computers to access the social networking sites. Students often have their own devices that they can use for social networking purposes. Therefore, teachers need to be aware of what students will have access and what students don't, so that all student have access to any material whether they participate in social networking or not. Finally, teachers need to be willing to have students' parents follow the sites and be involved, because not all students are given parent permission to have a social networking account.

**General social networking limitations.** Although the data was carefully collected from a diverse population of students, it is not representative of the general United States seventh grade science student population. The data collected is a representation of that specific group of students. In this study, student participation in social networking was limited by the amount of time students could participate in social networking with the class sites. Additionally, students who were not thirteen years of age had limited access to class sites, which factored into the results of this study.

Since the study was conducted in a junior high school, the sample was limited to the seventh grade students who attended school. Also, the content taught in the third quarter was different than the previous two quarters, which was also factored into the results collected. The results are also limited to the use of Instagram and Facebook, and not other social networking sites. Measuring factors in relation to social media can be difficult, because the use of different social networking sites can quickly become fads with adolescent populations. Thus, a social networking site that was popular in the past

might no longer be of interest for future student engagement. Lastly, the results of the survey may have been influenced because students might have been answering based on how they felt the teacher wanted them to answer instead of providing their true perceptions.

### **Recommendations**

First, a recommendation for future studies would be to look at social networking and how it influences student-teacher relationships, student relationships with other students, community building, and communication. Through this study, it was apparent that students used social networking to communicate with their teacher, but the impacts of that relationship were not thoroughly explored in this research. Therefore, further studies might wish to explore this relationship more closely in order to better understand the community building nature of such student-teacher social network interactions.

Second, throughout the research, not all students who participated in the social networking participated daily. Therefore, it is recommended that enforcing discussions and assignments on Facebook has the potential to more thoroughly test the implications of academic social networking use. Since social networking was not mandatory for the course, points could not be given for discussions held on the social networking sites, so students did not engage in discussions often. Usually students would “like” a photo, and not participate in the discussion questions asked. The concept of double tapping a photo, stating that they “liked” the photo does not show that the student neither read nor processed the information presented on the class Instagram.

Third, students throughout the study mentioned that they enjoyed the review games that were used during the course. Looking solely at the impact of online review

games on student achievement is another recommendation that can be explored in future studies. In doing so future studies might be able to take the information gathered to further understand the relationship between academic social networking review games and student achievement, engagement, and motivation.

Fourth, it is imperative that if social networking is used for academic purposes among students, students should be made aware of the potential for cyberbullying. When students in this study discussed cyberbullying they understood how important it is to respect one another and not engage in harassing comments with one another, especially when a teacher is involved with the social networking site. Students were responsive to the discussion initially held in class, and knew that the action of cyberbullying would not be taken lightly. By enforcing and expressing low tolerance for cyberbullying, the students never engaged in bully behavior through the site. All the comments made on Facebook and Instagram were directly related to the content or in agreement with the comment made by another student.

### **Conclusion**

This study illuminates the potential of academic social networking through Instagram and Facebook as an effectively support tool for students in the seventh grade science curriculum. The results clearly indicate that there was a difference in the levels of student's academic achievement, motivation, and engagement. Science can be a challenging subject because the need for an understanding of vocabulary and concepts that depend on prior knowledge and connection to science content areas. In this study, social networking was used to remind students, provide questions for discussions, and review games for studying. Academic achievement was measured through percent of

averages, grades, and performance on the cumulative exam, which showed that social networking positively impacted students' performance in class. Student engagement was measured by the amount of hours students spent on science assignments outside of the classroom and the number of missing assignments in which case students engaged in more hours of science content and had less missing assignments when they participated in social networking. Lastly, motivation was measured based on the willingness to complete work and the number of missing assignments, which also indicated an increase for social networking involvement. Overall, using social networking in the class had a positive influence on the student's performance in science. The results of this study can inform teachers on how to use social networking effectively to maximize its learning potential for improving students' academic achievement, motivation, and engagement.

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Appendix A

Student Survey

Student Name: \_\_\_\_\_

PLEASE CHECK THE BOX THAT FITS YOU/ YOUR OPINION THE BEST. BE HONEST.

1. Participated in:  
 Facebook                       Instagram                       Neither
  
2. Do you feel the use of social networking (Instagram or Facebook) influenced your learning this quarter?  
 Yes                       Sort of                       No                       Did not use social networking
  
3. On average, how much time did you spend working on science assignments (or studying for science class) a night?  
 1 ½ -2 hours    45 min- 1hr                       30-45 min    10-15 min    0 min
  
4. Were you more willing to complete your assignments than last quarter?  
 Yes                       Sort of                       No – the same as last quarter    Less
  
5. Did you find the tests more difficult this quarter?  
 Yes                       Sort of                       No – the same as last quarter    Less
  
6. If you used social networking (Facebook or Instagram) how many times a day did you check the classes' sites?  
 more than 10    8-10    5-7    3-4    1-2    rarely    never
  
7. Would you like your future teachers to use Instagram or Facebook to post updates and keep in contact with you?  
 Yes                       No                       No opinion                       Did not use social networking
  
8. Did you feel less distracted this quarter?  
 Yes                       Sort of                       No  
Why do you think that is? \_\_\_\_\_
  
9. Did you have more missing assignments this quarter compared to the last two quarters?  
 Yes                       Sort of                       No – the same as last quarter    Less
  
10. How do you think you did this quarter compared to the past two quarters?  
 Better                       A little better                       the same                       A little worse                       way worse  
Why do you think that? \_\_\_\_\_

If you did not participate in social networking why is that? (optional)

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**DATA COLLECTION**

Interview Questions

Name: \_\_\_\_\_

1. Did you participate in social networking with the class accounts?
  - a. If so, What account were you following, Facebook or Instagram?
  - b. Why did you decide to participate or not participate?
  - c. If so, when did you start following?
  - d. Would you want more of your teachers to use social networking? Why?
  - e. What did you like most about the class Instagram or Facebook? Why?
2. How did the use of social networking influence or not influence your learning in science?
  - a. Would you say you were less motivated or more motivated to finish your work this quarter? Why?
  - b. In what ways was your learning easier this quarter?
  - c. In what ways was your learning more difficult?
3. Do you think you did better/worse this last quarter, than the last two quarters? Why do you think that is?
4. What was the difference between this quarter and the last two quarters?
5. Why do you think you had more or less missing assignments this quarter than the previous two quarters?
6. Why do you think you teacher having a social networking site would be a good or bad thing?
7. Why did you find the use of social networking easy or challenging?
8. Do you think the social networking was more or less distracting and why?
9. What other ways could social networking is used in the class? Or why do you think social networking does not belong?
10. How did social networking with the class sites influence your performance in the class? Why do you think that is?
11. What was the most helpful tool (something to help you understand the content) you used this quarter?
12. What was your favorite thing about this quarter?
13. What was your least favorite thing about this quarter?