Use of Web 2.0 Technologies to Enhance Learning Experiences in Alternative School Settings

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Article Info	Abstract
	As the learning paradigms are shifting to include various forms of digital technologies such as synchronous, asynchronous, and interactive methods, social networking technologies have been introduced to the educational settings in order to increase the quality of learning environments. The literature suggests that effective application of these technologies in education can provide a means of addressing the lack of uptake and sharing of learning and teaching ideas and designs. This study investigated the effects of integrating social networking technologies on students' interaction, motivation, and engagement in an alternative learning school environment. Twenty-two 10th to 12th graders in an alternative school were recruited from their environmental science class to participate in this study. An online learning environment was designed to assist in-class instruction to promote student learning and engagement around the topic of climate change. Students' reflections that emerged from their interactions and posts on the social network indicated the relationship between the use of social networks and student motivation and engagement.

Introduction

Web 2.0 technologies are described as the internet sites that emphasize user-generated content, usability, and interoperability. Social networking technologies are web-based platforms where individuals make connections with others of similar interests (Gunawardena et al., 2009). These technologies are described as social structures consisting relationships between individuals or organizations within a certain domain (Liccardi et al., 2007). The use of social networks in educational settings mostly centered around interacting and exchanging knowledge in accessible ways (Yuen & Yuen, 2008). The literature in educational technology field has revealed that the integration of social networking technologies in school settings presented positive impacts on learners' motivation (Shim et al., 2011; Ologie, 2013) and engagement (Dholakia et al., 2004; Scholz, 2009; Al-Mukhaini et al., 2014). This study took place in an alternative school environment that serves youth who are unsuccessful in their regular school placement because of a variety of risk factors, such as lack of motivation, absenteeism, behavior problems, and low academic achievement. The following research question was addressed in this study: How does the integration of social networks help students be motivated and engaged in an alternative high school environmental science class?

Literature Review

Media has a strong influence on the social, emotional, and cognitive development of today's youth, accounting for a large portion of their time (Roberts, Foehr, & Rideout, 2005). Roberts et al.'s (2005) study indicated that 8-18 year old U.S. youth spend approximately 6.5 hour per day with media. Recently, there has been "tremendous growth in the popularity of websites focusing on social activities and collaboration" (Abbitt, 2007, p. 1). While, the concept of internet-facilitated social networking is not new, the emergence of social networking sites has expanded accessibility and use beyond levels in recent years (Lockyer & Patterson, 2008). Since social networks provide direct interaction among users/participants of the environment, they are considered innovative and different from traditional media such as television, film, and radio (Pempek, Yermolayeva, & Calvert, 2009), thus warranting further exploration in their educational uses.

Gunawardena et al. (2009) defined social networking as "the practice of expanding knowledge by making connections with individuals of similar interests" (p. 5). They added that social networking technologies are

"tools facilitating collective intelligence through social negotiation when participants are engaged in a common goal or a shared practice" (p. 6). One of the most widely accepted definitions of social networks is provided by PC magazine as follows:

> A web site that provides a virtual community for people interested in a particular subject or just to "hang out" together… Members create their own online "profile" with biographical data, pictures, likes, dislikes and any other information they choose to post. They communicate with each other by voice, chat, instant message, videoconference and blogs, and the service typically provides a way for members to contact friends of other members. (PCMag Encyclopedia, 2011)

Boyd and Ellison (2007) further elaborated the definition of social networks as web-based services that allow individuals to (1) construct a public or semi-public profile within a bounded system, (2) articulate a list of other users with whom they share a connections, and (3) view and traverse their list of connections and those made by others within the system. The nature and nomenclature of these connections may vary from site to site (p. 211). Social networking sites are designed to promote social interaction among the members in a virtual online environment. Communication is facilitated through information posted in the profile which provides information about one's identity, and it is provided through various applications similar to email or online message boards (Pempek, Yermolayeva, & Calvert, 2009).

Social networks have become an important part of the younger generations' life. A nationally representative survey results indicate that 41% of 12-13 year olds and 61% of 14-17 year olds use social networking sites in the US (Lenhart & Madden, 2007). Additionally, about half of 12-17 year olds with social networking site membership log on daily, with 22% logging on to social networking sites several times per day. Another recent survey shows that 48% of young Americans find out about news through Facebook, one of the most popular and widely used social media worldwide (Obsessed with Facebook, 2011).

There have been many efforts to integrate different kinds of technology, such as software and online technologies, to promote student learning. As Sefton- Green (2005) concluded from an extensive review of literature in this area:

> Computers and other aspects of Information and Communication Technologies (ICT) allow children and young people a wide variety of activities and experiences that can support learning, yet many of these transactions do not take place in traditional educational settings. In fact many of these may not be considered 'educational' according to our conventional understanding of that term (p.3).

Social networking websites are one such technology of interest to education researchers. Tynes (2007) listed the psychosocial benefits of social networks as the facilitation of identity exploration, provision of social cognitive skills, and fulfillment the need for social support, intimacy, and autonomy. Gunawardena et al. (2009) argued that since learning paradigms are shifting to include various forms of digital technologies such as synchronous, asynchronous, and interactive methods, the use of social networking is a natural. The type of learning that Web 2.0 and social networking technologies facilitate provides an opportunity to improve existing learning theories primarily because the theories were developed when wide ranging online communication between people of different races, locations, and viewpoints was not possible. Conole and Culver (2009) argued that effective application of social networks in education can provide a means of addressing the lack of uptake and sharing of learning and teaching ideas and designs. The various networks and social structures established within social networks can help promote additional student-student and teacher-student interaction (Griffith & Liyanage, 2008).

Dalsgaard (2008) argued that developing social networks provides a pedagogical potential that supports transparency. He emphasizes the importance of transparency which means that "students are visible to each other as potential partners and resources" (p. 5). To provide transparency, the social network has to provide both personalization and socialization. Personalization can be achieved by creating a personal profile page which provides the personal representation of the individual on the social networking site. In addition, research conducted by Mazer, Murphy, and Simonds (2007) revealed that increased personalization with a social network promotes greater motivation for students to participate and learn course material. On the other hand, "socialization begins when a personal page is connected to other personal pages of other individuals. Each individual builds his/her own network of personal relations" (Dalsgaard, 2008, p. 4). Selwyn (2007) reported that socialization within a social network includes sharing ideas, providing peer feedback, and engaging in critical thinking. Social networking sites have shown that students are willing to invest time and effort in

building relationships around shared interests and knowledge communities (Maloney, 2007). This creates a strong argument to integrate the social networks into educational settings.

Due to their potential to meet the needs of all learners (Okolo & Bouck, 2007), technology based learning environments have become an equalizing force for the struggling learner as they provide opportunities to demonstrate competence (Brodin, 2010; Smith & Okolo, 2010). Therefore, adequate technology exposure in the curriculum is needed for students who are at risk for factors such as dropping out of school and low graduation rates. The literature reveals benefits of learning with technology for at-risk students such as higher level of achievement and better engagement in the learning environment (Allsop, McHatton & Farmer, 2010; Smith & Okolo, 2010). Designing and integrating educational technologies that specifically to fit the needs of the learner is essential in order to positive outcomes (Jackson, 2003; Istenic, 2010). One of the technologies that started to be frequently used in educational settings is called computer-supported collaborative learning environments that provide direct control, a safe place for social skills practice, and a sense of presence for at-risk students therefore helping them feel more motivated and engaged.

Purpose of the Study

This study focused on the relationship between the integration of social networking technologies and students' motivation and engagement in the learning processes in an alternative school environmental science class. The following research question leaded the study: "How does the integration of social networks help students be motivated and engaged in an alternative high school environmental science class?"

Methodology

Research Design

Qualitative research traditions often offer a richer understanding in educational contexts (Jacob, 1987). The intent of conducting qualitative research in this study was to "explore human behaviors within the contexts of their natural occurrence" (Hatch, 2002, p. 7) and to focus on "process, meaning, and understanding" (Merriam, 1998, p. 8). Specifically, a case study approach was used in order to investigate a contemporary phenomenon (students' motivation and engagement) that occurs within its real life authentic context (an alternative learning environment), especially when the boundaries between phenomenon and context are not clearly evident (Yin, 2003). Using a case study approach, this study highlighted the role of the particular context in which participants were present on the studied phenomenon.

Participants and Context

The research site for this study was an alternative high school located in an urban area in the Midwest with a free and reduced lunch rate of 100%. Twenty-two 10th to 12th graders were recruited from their environmental science class to participate in this study. The breakdown of the class was as follows: eight English Language Learners (ELL), one homeless student, two special education students, three gifted and talented students, and one homebound student. The class included four White, nine African-American, five Asian, and four Hispanic students. During class time, each student was provided access to a computer with a server and personal account access through the Internet. In addition, USB drives were provided to each student to store their electronic project materials. Extra computers were available in case of any technical problem with the assigned computers.

Kleiner, Porch, and Farris (2002) define an alternative education school as a public elementary or secondary school that, "(1) addresses the needs of students that typically cannot be met in a regular school; (2) provides non-traditional education; (3) serves as an adjunct to a regular school; and (4) falls outside of the categories of regular, special education, or vocational education" (p. 55). Alternative schools often serve youth who are unsuccessful in their regular school placement because of a variety of risk factors, namely problem behaviors, which are often characterized by "highly fluid" (Kleiner et al., 2002) and smaller student enrollments (Lange & Sletten, 2002). Dupper (2008) indicated that students' lack of motivation, low academic achievement, and absenteeism were some of the problems occurring in alternative schools. In this study, the researchers aimed to alleviate these disadvantages through integrating social networking technologies into the environmental science classrooms.

Intervention

To promote student awareness, knowledge, and awareness in regards to environmental issues, instruction during the quarter was enhanced with social constructivist approaches via social networking website. These activities involved small group and whole class discussions in both face-to-face and online formats instead of teacher-centered instruction. The materials used in the classroom were mainly chosen from real world media such as short documentaries, newspaper articles, news reports, and the videos and posters designed by environmental activist groups etc. The materials were mostly shared in the social networking website in order to make the available for all students throughout the academic quarter. After using each kind of media as an instructional tool, students first joined small group discussions and then, whole class discussions. Table 1 shows the instructional plan implemented through the quarter.

Table 1. Instructional Plan

Objectives	Date	Main Instructional Theme	Activity
Sense of community	Week 1	Being a Community	Organizing base groups, creating profiles, photo and video sharing, and making connections on the social network
Awareness	Week 2	Realization of causes, effects, and ways to prevent environmental issues	Building connections between the causes, effects, and ways to prevent environmental problems
Awareness	Week 3	From local to global scale	Realizing the current environmental problems all around the world
Preparation for taking action	Week 4	Making a difference and action plan	Discussions around how to make a difference at school and community level
Taking action	Week 5-7	Taking actions	Designing multimedia artifacts and sharing them on the social networking site

For more effective in-class and online instruction, cooperative learning methods were employed to promote learning. According to Johnson, Johnson, and Johnson Holubec (2008), "cooperative learning is the instructional use of small groups so that students work together to maximize their own and each other's learning" (p. 1:5). They believe that to make cooperative learning methods work, there has to be four elements which are positive interdependence, individual accountability, face-to-face promotive interaction, interpersonal and small group skills, and group processing. During the first week, students were organized in their base groups. Small activities were implemented to both introduce the content and to make students get accustomed to cooperative group work. Students also familiarized to the social networking website by figuring out how to use it throughout the quarter. They learned some basic skills related to use of social networks such as organizing profiles, sharing media and interacting others.

In the second week, the focus of the instruction was an overview of the causes and effects of the environmental problems, specifically climate change, and ways to mitigate these problems. Students researched environmental problems, particularly climate change, during the week, and shared their findings with their first within their base groups face to face, and then the whole class through the social networking site. During the third week, students had the opportunity to broaden their views about environmental problems. They focused on environmental problems experienced in different parts of the world, mostly their home countries such as China and Mexico. They shared their materials related to global perspectives on environmental issues on their profile pages and discussion boards on the social network.

During the fourth week, students worked on the Climate Action Plans. In this week, they translated their knowledge they had obtained into the action. They prepared action plans they would like to take in order to create awareness in their school community. They first communicated within their groups on the discussion boards on the social networks, and then created signs, posters, and videos in order to inform others. Week five to seven were dedicated to the constructionist media designing processes. The activities between week five and week seven were gathered around the designing purposes. Following the design cycle (planning, designing, testing, sharing), students worked on their multimedia projects that aimed at informing others about environmental problems.

Due to the diverse nature of the class in terms of language, culture, and age, student-to-student social interactions were limited prior to the intervention. Thus, the online learning environment was designed and used

to promote social interaction among students. Social constructivist learning was also generated through the interactions in the online learning environment. Another reason for using an online learning environment was to minimize the negative effects of attendance problems, which was a common problem in this particular school. Students were encouraged to visit the website to understand what happened in the classroom and to participate in discussions when they were absent. A Ning social network was used to develop the online social community in this study. Ning was chosen because it is one of the most widely known content management systems (CMS), with an interface familiar to most young people. Additionally, Ning is appropriate for both educational and social purposes; it allows for educational content such as voting pools, discussion boards, blog posts, as well as, social networking tools including text, photo and video sharing, status updates, and individual profile pages.

Data Collection

Students completed synchronous and asynchronous online discussions throughout the learning intervention. In addition, the website provided the students opportunities for sharing photos, videos, and information with others. Students were also asked to write weekly reflections about their learning progression and attitudes about the learning process as well as the tools used in-class. Data collection occurred over the seven-week period of the climate change unit. A qualitative research design was used and data was collected through the blog posts written by students on the Ning website and observational field notes.

Blog posts allowed the researchers to see students' posts and responses in an organized way including order, time and date. Even though they were not required to enter blog posts, all students entered blog posts when they were online both in and outside of the classroom. Also, they were not provided any format for blog posts in order to give them freedom to post in the format they wanted. During the six-week unit, students posted 94 blog posts, 37 photos, 19 videos, and 2-3 comments per each of these posts on the average. In addition, 14 discussion threats were initiated by the students. Students participated in online discussions and wrote blog posts regularly during the quarter. These blog posts offered an opportunity to see the progress in how students expressed their understanding with regard to science content and their attitudes towards to the learning process, specifically the online learning environment. In addition, the fact that the students responded to each other's posts created social interaction among the students, which helped researchers to see participants' perspectives about the learning process. Additionally, the social interaction through Ning provided evidence for understanding how the students promoted each other's expressions, understandings, and attitudes with regard to environmental problems.

The observation data is the other kind of the data collection methods in this study. Marshall and Rossman (1995) stated that participant observation is an essential element of all qualitative studies which allows researchers to "hear, see, and begin to experience reality as the participants do" (p. 79) in natural research settings for a considerable amount of time. Being present in everyday settings, participant observation enhances the awareness about the interactions taking place in real life context (Glesne, 1999). Using observational field notes allowed the researcher to present the particular occasions that illustrates the role of the social networking in this particular setting. Due to his presence in both online and physical learning environments, the leading researcher took the role of participant observer in this study. Participant observer role lead to the researcher's presence in the site being less obtrusive and to the researcher beginning to understand the participants' views of their own world (Malinowski, 1961). Being present in everyday settings, participant observation enhances the awareness about the interactions taking place in real life context (Glesne, 1999).

Data Analysis

The qualitative data was analyzed using a constant comparative method in the NVivo qualitative data analysis software. To analyze the data, Miles and Huberman (1994)'s general analysis framework was employed. This framework includes data reduction, data display, drawing conclusions, and verification (see Figure 1). All the qualitative data was uploaded into NVivo and parent and children nodes were created based on main themes organized based on the research objectives. This approach allowed for the elicitation of rich descriptions that captured the essence of the phenomenon in question from substantial raw data sources.
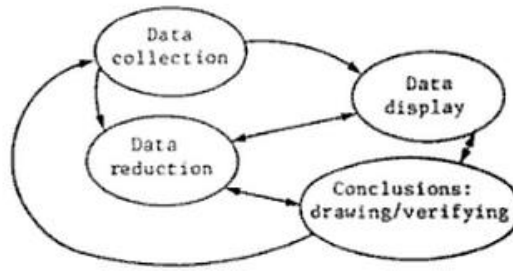
Figure 1. Components of Data Analysis: Interactive Model

The validity and reliability of the study was provided with the following actions. First, the codes that emerged within one data source was considered with another data source to support or disprove the validity of the naturalistic code, essentially triangulating the code against multiple data sources (students' posts on the site and observational field notes). Second, at least 20% of the data was coded by the other researcher for inter-coder reliability (Miles and Huberman 1994). Then, each version was reviewed together to see if the congruity between these two code sets was high enough.

Results

The data revealed that the social networking website, where social constructivist processes mainly occurred, provided many benefits for students in this particular environment. Five main themes showing these benefits were emerged based on the data from spontaneous blog posts and weekly reflections on the social networking website as well as observational field notes. These five themes were (1) keeping up instruction in case of absenteeism, (2) learning from each other and reflecting what students learn, (3) working on the tasks on their own pace, (4) use of visuals and language support for ELL students, and (5) social networking as a fun experience.

Absenteeism

In the particular school, absenteeism was one of the biggest challenges for both students and teachers. Since the population of this school was composed of teen mothers or pregnant teenagers, different students became home-bound at some points during the quarter which resulted in them having a hard time catching up on the instruction. Students' blog posts and reflections showed that the social networking website gave them the chance to follow the instruction and complete the assignments when they were not physically in the school. For example, one student stated

> I think that this website helps us a lot because as some of us are mothers we can't always get to school and this website allows us to access our work from home or where ever there is internet connection. It is also really easy for me to keep track with what I did do already and what I've yet to do.

In their blog posts, students also addressed how the social networking website helped them to catch up on the instruction throughout the quarter. Since students were able to adapt to the class more easily when they returned to the school, they did not lose their motivation and engagement in the learning process.

The observational field notes also supported students' reflections on their blog posts. The researchers' observations highlighted how the social networking website helped students with absenteeism issues to keep track on the instruction. There were several cases where students were able to complete their work outside of the classroom when they were not present in the classroom.

> Student 6 came to the class earlier and told that she had to miss today's class due to her appointment with the doctor. In order to not to remain behind, she asked what she needed to do. I told her that there were instructional videos and a discussion board for this particular day's class on the social network. She said that she would work on it as soon as her appointment ended. At the end of the day, she

contributed the discussion as much as others being present in the class. # Observational Field Notes (March 2)

Learning from Each Other and Reflecting

Students also explicitly stated that they promoted each other's learning and understanding via the social networking website. They were pleased to read each other's posts and comments, which helped them to understand the content better (see the sample quote below).

> I think this is a good idea. I really like that fact that we use the computers more this semester because it doesn't put so much pressure on us having to write on paper and present in class. Instead we just post what we want to say and our friends and teacher just reads it from the website. We don't have to ask each of our friends to learn what they know. I rather do this in every class than just this one. #18

Although one student stated that she was not comfortable sharing her responses with others in the class, almost all other students appreciated being able to share their understanding and to hear others' thoughts about it. They also noted that the posts they wrote on the site helped them to check and confirm their understanding with the instructor and their classmates (see the sample quote below).

> So I think we should continue to work on the climate change website. I think it would be good for student to write about what they learned in class, so when they can't respond to the question that was asked about a topic we been studying, then the teachers and other students will know if the student didn't understand what has been going on in class. They can help this student with this way. #9

Even though all social constructivist studies aim to create learning environments where students promote each other's learning, the fact that students were aware of the positive impacts of their interaction on their understanding and learning was a unique indication of the effectiveness of the social network in this particular environment.

In addition, students also appreciated reflecting their understanding and opinions on the social network where their classmates could see. They stated that blog posts helped them to refresh their memories as well as getting feedbacks about what they learned in case they did not get a chance to share it in the classroom (see the sample quote below).

> To me using this website was interesting it was interesting because we got to discuss are opinions on the questions we were asked and also got to see other people's responses on the question. I also liked the website because I liked talking about what I learned in class so far, when I had to talk about a certain topic that was asked from the teacher, it helped me refresh my memory about what we learned that week and so I know that I learned something that week. #7

> We learn something on the website then we get the opportunity to discuss what we learned and even blog about it. It doesn't make you feel like you're in the classroom learning about things you think you will never use in your life. #3

> It is also fun to see other folk's post and make comments. #20

Lastly, some students believed that writing blog posts on the website was helpful for them to improve their reading and writing skills (see the sample quote below).

> In the last quarter we started to use the website, and for me its a great thing to have. This climate change website you learn a lot from it. This helps us get better at reading, sharing and comprehending. I would recommend this to anyone because these are real life things that we learn about. I liked learning this technologies. #15

While interacting on the social networking website, students also let each other know that the posts they read or watch helped them understand the content better. Students frequently communicated with their classmates through the comment option under the posts. They expressed how their classmates' posts helped them to broaden their views about the issue. As couple students posted comments under the videos shared by other students

In the short movie that you presented yesterday was a big eye opener for me. The things that I saw were things that I sometimes caught myself doing. All the running water, lights staying on, and all the other wasteful things that I have done. But I can make a stop to that by changing the way I go about things. I could us less water, change my light bulbs to energy efficient lights, start recycling, and just really go green. That short movie really gave me a different way to look at my own behaviors. #17

I liked your ideas for your group project. Pictures you have here are very interesting. I did not know arctic and Africa both have climate change problems. I am very interested seeing your presentation next week. #1

In several cases, they found others' posts useful for their own work and asked for permission and help to use the materials (see the quote below).

I loved it (a video)! I wanna use it in my project. How can I take it out? Would you send me the link? #15

Working at Own Pace

Another advantage of the social networking website was how it enabled students to participate in discussions and complete assignments at their own pace (see the sample quote below).

I think the climate change website is a good resource. sometimes I feel you guys ask to much of us, but we go to the website and work there in our own pace. #20

There were several factors negatively affecting students' pace while working on the assigned tasks. For instance, some students needed extra time to complete these tasks due to several reasons such as absenteeism and being a special education or ELL student. In case these students needed extra time, they used the social networking site to complete their assignments during advisory hours or at home (see the sample quote and observational field notes below).

I cannot finish everytihng in the school. Website help me to finish my homework wherever I have internet. In Ms X office or home. #7

Today, the special education teacher told me that couple of the students had to spend the rest of the day in her office. She wanted to help them in their assignments on which they were behind. After getting enough information about the tasks students were supposed to work on, she took the students and left the classroom. On this particular day, these two students completed several tasks they had been assigned. #Observational Field Notes (March, 22)

English Language Learners (ELL) and Special Education Students

The class where this study was conducted involved English Language Learners (ELL) and special education students whose learning, writing, and communication speeds were very different. In the social networking website, they were able to participate in the online discussions at their own pace and spend more time as needed on the assignments throughout the quarter. These students also studied the class content on the social networking site during their advisory hours with personal assistance. As one student commented,

Yes, I like technologies because sometime we need to find dictionary by sometime we don't understand the word we look the pictures for find something. We need to go to the website to do. I like to do technologies because sometime I watch movie and find climate change. I understand without read a lot. I can study with Ms. X after class. I don't need write and read every thing in classroom. #13

The observational field notes also showed that using the social networking site for classroom discussions helped students complete their tasks with the additional assistance from special education and language teachers.

Student 13 could not understand the readings for today's in-class discussion. The classroom teacher suggested me to get the assistance of language teacher. In order to do that, I asked the language teacher

to visit the classroom and help this particular student. After arriving the classroom at the end of the class hours, the teacher started working with the student during the break and help her finish her blog post on the discussion board on the site. #Observational Field Notes (March, 15)

Social Networking as a Fun Experience

Students also mentioned that using the social network for learning was not only fun, but it was also different than their prior learning experiences. They found the use of social networking technologies an effective way of learning. For example, a student stated

> In my opinion the things we used for the class were quite different from any other class. I never experienced a class based off of any websites but I do have to admit that I like it a lot. We used this climate change website which is kind of fun. at first I thought it was going to be boring and just torture but it teaches you a lot of interesting things about your environment which you should have already known. #3

In addition, some students stated that the reason why they liked using the social network was its similarity to the popular social networks they were familiar with and allowing them to use it without experiencing any difficulty.

> I guess this website is kinda cool though. it reminds me on facebook because you can write on peoples wall, post pictures and like things. #11

> I kind of like this website too, because it looks kind of like facebook. It was not hard to use it at all. #18

Several times, students stated that they enjoyed customizing their profile pages by adding profile pictures, posting personal pictures and videos, and adding people as friends. These additional non-academic features of the site served as ice-breaker at the beginning, and increased students' interactions throughout the academic year. The following observational field note illustrates the point.

> The first day of the semester, I sent out the registration links to the students and gave students 30-45 minutes to organize their profile pages. I observed that they already started adding their personal pictures, posting comments on each others profile pages, adding others as friends, and posting fun pictures and videos. It was a good exercise for students to get to know each other. #Observational Field Notes (February 10)

> Students from different backgrounds sit in different tables and they rarely talk to each other in the physical environment. However, when I reviewed the interactions on the social networking site tonight, I observed that these students post comments on each other's post, like their pictures etc. Also, I would say that the groups in the online environment are more heterogeneous than the physical classroom environment. #Observational Field Notes (March 3)

Results and Discussion

This study explored the relationship between the integration of social networks in classrooms, specifically an alternative learning environment, and student motivation and engagement. The findings emerged from students' blog posts and researchers' observational field notes were categorized in five main themes: (1) keeping up instruction in case of absenteeism, (2) learning from each other and reflecting what students learn, (3) working on the tasks on their own pace, (4) use of visuals and language support for ELL students, and (5) social networking as a fun experience. There are natural connections between motivation and engagement, and increases in motivation and engagement usually result in increased academic achievement (Martin, 2008, Martin et al., 2003, Meece et al., 1990, Pintrich and DeGroot, 1990 and Schunk, 1990). In the particular setting where this study was conducted, lack of motivation and engagement were the biggest challenges experienced by students, which resulted in low academic achievement. Data collected through their online discussions, blogs, weekly reflections, and observational field notes showed that the use of social networks in this particular setting helped students feel being more motivated and engaged.

By providing students with their own pages and profiles on the social network site, the researcher aimed to promote social presence of the students in this particular online learning environment. Students' reflections

about their experiences on the social networking website indicated the existence of their social presence which is defined as the student's perception of being in and belonging to an online learning environment (Picciano, 2002; Tu & McIsaac, 2002). The students' reflections also demonstrated that their social presence in the social networking environment directly influenced their performance and motivation. Exploring the similarities between other popular social networks and the Content Management System [CMS] used in this study, the students personalized their profiles with information and multimedia. Thus, the profiles created by users played an icebreaker role at the beginning in addition to providing extra motivation for students to visit the website regularly. The statistics from the social networking website provided information that students updated their profiles, communicated with each other, and signed into the network outside of school frequently. Students mostly stated that they enjoyed the time they spent on the website. They were more engaged in the discussions and were more comfortable interacting with each other on the social network. These findings were consistent with the research conducted by Mazer, Murphy, and Simonds (2007) who revealed that the more personalized the social network presence the greater the motivation was for the students to participate and learn course material.

Lastly, the data on the social networking website illustrated how students promoted each other's expressions, understanding, and attitudes with regard to the course content. In several occasions, students commented others' posts in order to add more information, asking for clarification, or showing appreciation for the quality of the work. In spite of the classroom culture in this particular setting where interaction between students was very limited due to the diverse population, students communicated each other regularly and effectively through online learning environment as well as physical classroom. Because students personalized their profile pages on the social networking site by adding personal information, photos, and videos, they had a chance to learn about each other, which resulted with more personal connections between those students. Hence, students felt more comfortable about sharing their ideas, giving feedbacks to each other, providing personal information etc.

Implications

Academic achievement is one of the most important criteria students, parents, and teachers take into account. There is always a natural connection between motivation and engagement, and the increase on motivation and engagement of students usually results with academic achievement. In the alternative school environment where this study was conducted, lack of motivation and engagement were the biggest challenges, which caused low academic achievement. In terms of the academic achievement of the students in this study, the school principle reported that the percentage of the students who passed this class was dramatically higher than the other science classes. Therefore, the school principle strongly encouraged other teachers to use similar strategies in order to create a positive change in the school environment.

Conclusion

Technology integration is a necessary skill for teachers in this century (Zhao, 2003). A technological tool needs to be undergirded by sound pedagogy and not implemented as technology for technology's sake (Bull & Bell, 2008). Teachers who want to use technology-enhanced teaching methods need to choose appropriate technologies to integrate into their instruction. One of the most common instructional fallacies both researchers and teachers make is technology integration without clear consideration of the pedagogical demands. In this way, technology becomes an obstacle for learning instead of being a learning tool. The technologies used in this study were based on the pedagogical framework of social constructivism. The Ning social networking website promoted interaction among students as the social constructivist learning processes aim. It is important for teachers to make right decisions to use appropriate technologies in their instruction based on the methods they employ, content they teach, and the characteristic of their students.

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