The Use of Social Network for Students' Knowledge Construction

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Abstract: In view of the current issues of social network applications in education, this paper proposes six suggestions for school educators to use social network for teaching and learning. Moreover, it uses a lesson on the topic of "History of Hong Kong" to demonstrate how an educational social network platform - "Edmodo" can assist Grade Four students in constructing knowledge in a Hong Kong primary school. It sheds light on how a lesson premised on an experiential learning model using a social network can be delivered.

Keywords: Social network, Edmodo, Facebook, experiential learning

Introduction

Social Network is an online platform that focuses on facilitating the building of social networks or social relations among people who share interests, activities, backgrounds, or real-life connections [1]. Take Facebook as an example. Facebook has been established for only six years, but it currently has become the world's second largest site after Google; it is also the world's largest social network site [2]. The number of Facebook users is over 350 million, which is the world's third largest "population", just after China and India, the two most populous countries [3].

Facebook is not a business, but a kind of human lifestyles. According to the survey conducted by Ericsson, a hardware manufacturer [4], 35% of respondents used their iPhone or Android phone and performed at least one application before getting out of bed in the morning. Among them, 18% used Facebook. Daily information sent through Facebook is over 55 million, weekly information shared is up to 3.5 billion. Facebook may have become the largest database in the history of mankind's.

Social network applications have been increasingly used in education, especially in higher education [5]. However, according to the current research findings, social network applications have often been used as a means of making new friends or keeping in touch with friends rather than for learning purposes [6]; in addition, they have brought about negative consequences such as Internet bullying [7]. Some social networks restrict young learners to access due to safety considerations. Currently, few studies have been conducted on using social network to construct knowledge in school education.

The rest of this paper first proposes six suggestions for employing social network in schools; then it provides an example for using a social network application to support Grade Four students to construct knowledge on the topic of "History of Hong Kong" in General Studies guided by an experiential learning model in a Hong Kong primary school, followed by a conclusion.

1. Suggestions on Social Network Applications in School Education

Social network could be a powerful and valuable resource for learning when it is used properly. Below are six suggestions for using social network in learning and teaching.

1.1 Establishing a monitoring system
1.2
There are many online crimes and issues in recent years, so teachers must monitor the how students use the social network carefully. A controlled social network for learning could allow teachers and parents to monitor students' learning easily since teachers have the authorization to moderate students' topics on learning. Moreover, with a good monitoring system, teachers can keep the conversation private to the members of the group, so as to protect teachers' and students' privacy.

1.3 Enriching teaching contents
1.4
There is lots of useful information on the Web. A more feasible approach to use social networks is to aggregate information from the Web and share with students. However, this could be very time-consuming. A good social network platform allows teachers to aggregate information from different places on the Web, subscribe and receive timely updates automatically.

1.5 Keeping the identity as a teacher
1.6
Teachers should build up a professional image and a role model before students and parents. Teachers must be careful when using the social network, especially maintaining the independence of the personal and professional life, and to ensure that the content does not affect the image of the individual and the school.

1.7 Managing time efficiently
1.8
A good educational social network can help teachers and students to have a better time management. Teachers can plan lessons ahead, and time can be wisely used for better preparation. Moreover, teachers can pre-set tasks and give students a period of time to finish. Some students may finish the tasks faster and can do some other quizzes or assignment, some may need more time. This can cater for individual learning paces and needs.

1.9 Employing a social network platform to facilitate teaching and learning
1.10
In order to facilitate teaching and learning, teachers should choose a social network which can be run at different platforms (e.g. iOS or Android), so that students and teachers could use it without time and place constraints. The social network chosen should also provide a place where differentiated instruction from one-to-one to whole group communication can happen. This can promote collaborative learning among students which is the most beneficial for students' learning.

1.11 Sharing of teaching and learning activities
1.12
There are always some exciting and interesting ideas during daily lesson planning and teaching which can be shared in the social network. Students and other teachers can

exchange ideas and enhance both teaching and learning. The sharing could be within the school community or even globally among teachers and students. Furthermore, because of the limited teaching hours, students may not have enough time to discuss, ask questions or express their views in the lessons, social network can provide students with a platform for further discussion and collaborative learning.

2. An Example of a Social Network – Edmodo Application for Students' Knowledge Construction

Edmodo is considered a secure microblogging medium conducive to collaborative knowledge construction [8]. It can be used for learning across formal and informal learning settings for students to connect and collaborate, share content and educational applications, and access homework, grades, class discussions and notifications (see fig.1). The platform can be run at different platforms (e.g., iOS or Android) (see fig.2). There are more than 8,200,000 teachers and students connecting globally by Edmodo's network [9].

Figure 1: The interface of Edmodo

Figure 2: The login page of Edmodo at PC web browser.

2.1

2.2 Edmodo: a social network to help instructors and parents to stay connected with learners' performances and online activities

Social network is always a free discussion platform where Web surfers or bloggers' discussion topics are not restricted. Some of the discussion forums or blogs such as hkgolden.com, a famous Hong Kong discussion forum with 80 thousand registered users, however, commonly adopts a moderator system to supervise their members' activities and discussion topics. For those discussion forums or blogs categorized into different topics, the moderators are always voluntarily appointed to someone whom the blog or forums owners may not be familiar with. Edmodo provides a closed environment where effective monitoring could be executed by schools' course group teachers. Students could only join an Edmodo group with a unique group code given by the teachers. The group code could also be locked or reset by the teachers. At Edmodo, teacher accounts features a user-friendly interface which teachers can provide instruction from one-to-one to whole group communication. Teachers once registered with a valid email address will receive an email notification whenever students submit assignments or post content in the course group. Edmodo highlights a feature that teachers can choose to moderate all posts or respond before they are published onto Edmodo. As a result, students will use Edmodo to communicate among peers and teachers, and share educational content only, so it is different from other social networks such as Facebook or Twitters. Also, the registered teachers of the course groups are authorized to remove any post uploaded by their students once they find the content is inappropriate for learning. Moreover, parents can also be invited to keep a good communication with their children and teachers. With a parent account, parents or guardians can track their children's learning and performances when registered. In other words, a consistent parent-teacher collaboration can be maintained to monitor their children's online activities or academic performances. Edmodo features a school administrator function which the registered school with Edmodo subdomain can keep track on the classroom and whole school participation record. The school can make use of this statistic for assessing the use of information technology in learning.

2.3 Edmodo: a social network for enriching teaching content and maintaining the teachers' role as a professional instructor.

Thanks to the development of web feed format called RSS (Really Simple Syndication), social network users can easily aggregate information from favorite websites and subscribe them to timely updates into one place or website [10]. A learning social network, on the other hand, allows teacher users to publish useful information such as news headlines automatically quoted from other websites. This can facilitate learners to interact and collaborate with each other in the fast growing network age. With the incorporation of RSS feed technology, Edmodo enables teacher users to share information to their students. In a meanwhile, learning is not limited to passive viewing of content that instructors created for learners. For example, a science or physics teacher, once coming across with an astrophysics or space topic, can use RSS feed technology to collect timely updated news from related astro-science websites or blogs. This feature at Edmodo could arouse learners' interest in learning and broaden their scope of view resulting from rich teaching content. Teachers instructed their students in a Web-2.0-way could build up their images as a professional instructor. The role of teacher as a learning facilitator is further reinforced.

2.3 Edmodo: a social network where users with known identities ensures a safe learning environment.

Educators sometimes cast doubts about social networks because of unrecognizable web surfers' identities and internet privacy. The true identity of any user must not be provided to social networks such as Facebook or Twitters. It could be risky to the learners especially in the teenage or at lower grades when they use social networks without parents or guardians' supervision. Therefore, the true identities of social network users should be given priority when schools attempt to adopt a social network in teaching and learning. Edmodo subdomain serves this purpose which the true identity of a teaching staff at school should be confirmed by the school administrator before the teaching staff started a group. This security gateway avoids any malicious Web surfer impersonating a teaching staff identity to register under school subdomain. Besides, only limited necessary information is published onto Edmodo in student accounts and teacher accounts. With the sub-domain and certification of teaching staff, students can surf at Edmodo more safely without worrying about the internet privacy.

2.4 Edmodo: a social network benefiting its users for time management

Critics always question the use of social networks among learners at teenage or lower grades because actively social network behavior may lead to a positive correlation net addiction. Net addicts are always diagnosed with activities such as excessive, overwhelming or inappropriate pornography use [11], gaming, online social networking, blogging, email, or internet shopping [12]. No other means except a good net discipline can avoid excessive use of internet. Though it can hardly find a social network with an alarm or a calendar function, Edmodo is primarily designed for teacher and student users to manage their teaching and learning progress more efficiently. It serves as a calendar or alarm function which events could be dated by teachers or students. Teachers could schedule their teaching contents and notify students in the calendar. It also allows fast learners and less capable learners to complete tasks according to their own learning pace. Moreover, it allows teacher users to easily access their teaching resources locally or globally definitely benefiting teachers for saving time in browsing relevant resources. More detailed on topic of sharing of teaching resources and activities will be depicted in section 2.6.

2.5 Edmodo: a social network being incorporated into a pedagogical practice
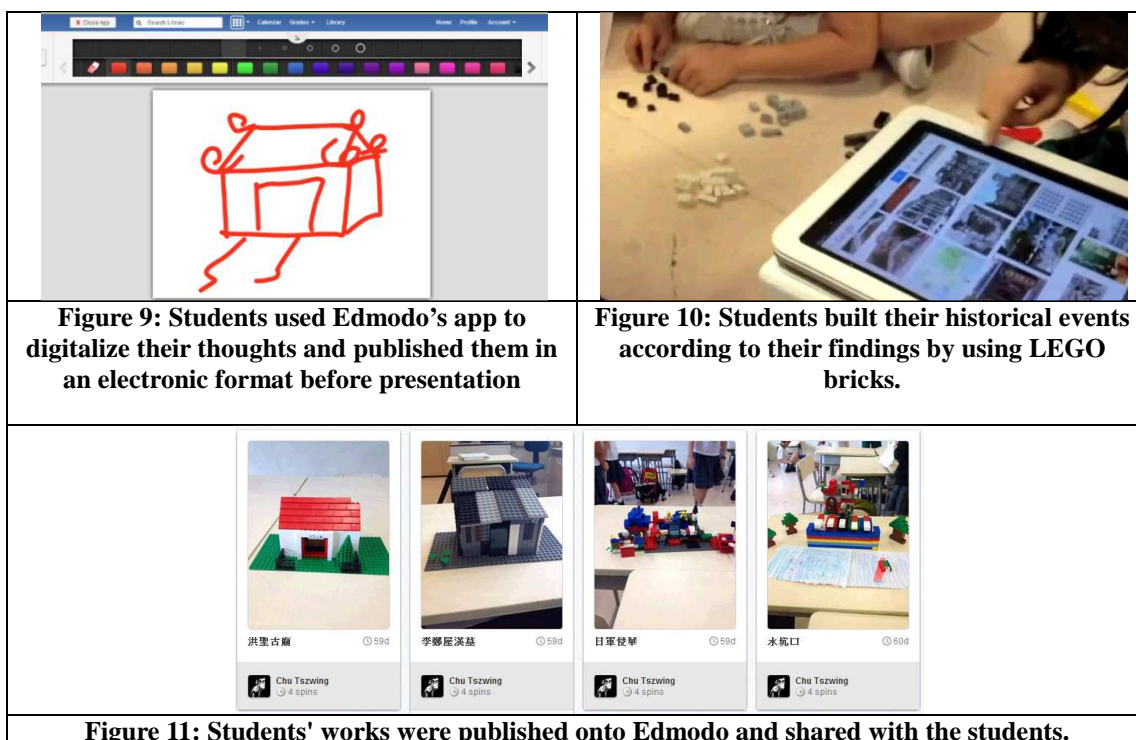
Nowadays, many schools in Hong Kong promote information technology in teaching. A large amount of teachers' time is spent on purchasing computer hardware and software, developing platform, and using social networks in teaching, teachers may forget their teaching style as a result. Teachers may know a lot of techniques when using information technology, but not able to maintain a classroom routine and management. It is believed that teachers should enact the lessons using appropriate pedagogies supported by social network and other information technology properly in the classroom. This is the most beneficial for students' learning. In this section, it provides an example of how students constructed knowledge on the topic of "History of Hong Kong" in General Studies lessons supported by an educational social network application, Edmodo, premised on an experiential learning model in a Hong Kong primary school. The design of the lessons hypothesized students gained the understanding of historic events by hands-on experience on constructing historical scenic panorama or model heritage-buildings using LEGO bricks. The pedagogy adopted in this lesson is experiential learning model [13]. In order to enact the lesson in an inquiry approach, this paper modified the model comprising of four stages: engage, reflect and observe, form abstract concepts, and do "hands-on" experiment.

2.6 Engage

Students had learnt the importance of exploring history and some of the famous buildings in Hong Kong in previous lessons. Edmodo played a role as a discussion board to help students post a topic on what they learnt from previous lessons, exchange ideas or share content (see fig.3). Students could be initiated to start their discussion about the topics that they were interested anytime and anywhere. To a teacher, Edmodo could be used to collect the students' feedback and examine students' prior knowledge before the lesson. Based on the information, the teacher adjusted the follow-up actions and the teaching plan of the next lesson. To customize the classroom for learners, Edmodo provided a platform which could differentiate instruction from one-to-one to whole group communication. The teacher started the lesson by assigning a task clearly to the class on "Constructing a Historic Scenic Panorama or Heritage Building in Hong Kong and Introduction". Students were guided to browse the websites which were prepared by teacher (see fig.4). At this stage, students proposed the ideas or questions in groups whereas collaborative efforts from students of other groups could also be involved (see fig. 5).

   Reflect and observe - Fragmentary information from students in groups was gathered and collected. Teachers facilitated a discussion on which scenic panorama or heritage building should be chosen. Edmodo acted as a platform where students could easily post pictures or attach web links. Other students who discussed with each other could also use the web links or pictures as shown on the posts (see fig.6). This function helped learners, especially lower grades students who depend on visual aids or pictorial forms heavily when they were asking for brainstorming or concept building activities.

Figure 1: All the learning materials were uploaded to Edmodo	**Figure 2: Students browsed the information through Edmodo**	**Figure 3: Students shared their ideas in the previous lesson in Edmodo**
Figure 6: Students' post in Edmodo could be displayed as a thumbnail	**Figure 7: Edmodo's library could store teaching materials and students' ideas according to learning topic**	**Figure 8: Students posted their findings onto Edmodo. Some discussion had been made.**

Figure 9: Students used Edmodo's app to digitalize their thoughts and published them in an electronic format before presentation	Figure 10: Students built their historical events according to their findings by using LEGO bricks.

Figure 11: Students' works were published onto Edmodo and shared with the students.

Form abstract concepts - Students were asked to define the pieces of information into concepts by reducing the information content or observable references, typically to retain only the information which was relevant for constructing a historical scenic panorama or heritage building in Hong Kong. At this stage, several specific questions for groups were posted onto Edmodo to guide their works (see fig.8). Students in group answered them but only in the literal format. For these lessons, students were asked to make use of other drawing apps that could pictorialize their abstract ideas or concepts. This app could digitalize their thoughts and publish them in an electronic format before presentation (see fig. 9). Edmodo served as a social network that could simply organize students' thoughts digitally and share with other students or even students from other classes.

Do "hands-on" experiment - After depicting pictures and presentations, students started constructing historical scenic panorama or heritage-buildings with LEGO bricks. Students made their models by using the contents from other groups as references for the design or architect style of heritage buildings, scenic outlooks or decoration. Edmodo acted as a platform where students' works could be published or displayed in electronic format. Edmodo also provided high compatibility features to integrate with other apps. The lesson demonstrated how a 360° immersive 3D creating app called "SpinCam" was employed to display the students' works (see fig.11). Students could gain the experience of presenting their ideas in an innovative way besides creating a 2-D drawing or a text depicting the historical event. As a result, this could lead to new experiences on learning with the use of social network. The learning cycle could be renewed to become a sustainable learning habit once they got adapted.

2.7 Edmodo: a social network for sharing of teaching content and learning activities

Besides, the use of social network in school could enhance the learning community's atmosphere in using information technology. Edmodo serves as a knowledge management and sharing tool for students and teachers where contents or teaching materials could be stored in the built-in library in Edmodo. Once students had formed an idea, teachers could archive students' posts with the attached web links, pictures, audio and video or document

files in the library according to their groups. Students could grasp ideas from these contents of other groups or revisit these contents in the library (see fig.7). Edmodo also benefited for a school-based knowledge resources development. With the authorization of the class building teachers, teachers or students from other classes could also access these contents. Such practice could enhance digitalized knowledge management in a school. Furthermore, there was a function of built-in community where teacher around the globe could share their teaching activities and ideas in Edmodo. Edmodo allowed learning community that could be created without any border where professional development could take place at any time or any place.

3. Conclusion

This paper presents the current status of social network in education, and proposes six suggestions on implementing a social network in facilitating teaching and learning in schools. In addition, the paper provides a lesson as an example to elaborate how a social network could be applied in classroom practices premised on an experiential learning model. The results show that integrating social network into education with a manageable platform could help students not only to extend their learning process, but also to enhance their learning effectiveness and promote knowledge construction. With the development of internet technologies, integrating social network into instruction could provide more timely updated information as teaching and learning content. It could also bridge teacher-student interactions seamlessly in the digital age. However, the authors maintain that innovative technology is only a tool that could not automatically bring about a paradigm shift. It is the pedagogy and the teachers' beliefs that play an important role in transforming classroom practices.

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