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USING FACEBOOK TO PROMOTE STUDENT ENGAGEMENT IN AUTHENTIC LEARNING FOR VOCATIONAL EDUCATION AND TRAINING (VET)

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Abstract

The popularity of online social media has had a significant impact in education and has brought an amazing potential in promoting authentic learning. Authentic learning engages learners by the opportunities of actually participating and working on real-world problems that links the classroom theories. However, it can be a difficult shift without an adequate involvement of students. Facebook due to its popularity and usefulness, teachers can not only introduce motivational authentic learning tasks but also allow students to come together to discuss, collaborate and resolve real-life problems. In this study, teachers gain the advantages of using Facebook as a tool to provide students experimental learning opportunities and students are encouraged to spend efforts to explore, discuss, exchange ideas in groups and meaningfully connect what they are taught in school to real-life problems and applications. These students are from the Hong Kong Institute of Vocational Education (Tsing Yi) and all of them are studying Higher Diploma in Civil Engineering. Purposive samplings are employed to find out the students' preferences in using Facebook to introduce authentic learning opportunities among many other means. In the student survey, levels of engagement and possible learning activities such as sharing resources and interacting with other students are presented. This paper investigates the effectiveness of Facebook use in bringing up authentic learning opportunities and how the overall quality of students' educational experience with this technology usage. The result has shown that the use of Facebook as a tool of promotion has a positive impact on student levels of engagement and has enhanced students' learning experience such as sharing ideas with classmates.

Keywords

Facebook, Authentic Learning, Student Engagement, Engineering Education, Real-world problems and applications.

Introduction

Vocational Education and Training (VET) enhances learners to apply workplace skills and develop practical knowledge to support the society development. It advocates a unique teaching strategies to enable students to tackle real-world problems. Authentic learning is one of the pedagogical approaches and the success of VET depends on an active engagement of students. Meanwhile, social media such as Facebook (FB) has enabled multifaceted communication and sharing opportunities with often-authentic learning interactions and activities for students beyond the physical boundaries of a typical classroom. Therefore, this study attempts to investigate the effectiveness of making use of FB in bringing up authentic learning opportunities from the students' perspectives. This research also investigates how the overall quality in enhancing student engagement with this technology usage.

In tertiary engineering education, it seems common to find cases of students who are not eager to participate in authentic learning opportunities (such as various competitions and projects), especially such opportunities do not tie in with their academic results. Some students participate these activities only if their attendance is compulsory. To tackle this issue and improve student engagement, the approach of communication has changed from typical dissemination channels such as using posters, emails and sharing the information among the classes (passive one) to an online publishing through FB in a well-established learning community (interactive one). A full observation, reflection and statistical analysis on students' educational experience were conducted to deduce the effectiveness of the interactive communication approach applied.

The involvement in a real-world project led students to develop an interest in the subject matter. Observations from the analysed data provided valuable information for teachers to adopt more effective communication channels in the context of vocational education. Based on a questionnaire developed, purposive samples of some civil engineering students studying vocationally oriented higher diploma programmes in Hong Kong Institute of Vocational Education (Tsing Yi) were adopted to understand the situation. Online publishing in a well-established learning community is thus worth exploring to support teaching and learning in VET.

Literature Review

Education technology is vital for today's young learners. In education, the term authentic learning refers to a wide variety of educational and instructional techniques focused on connecting what students are taught in school to real-world issues, problems, and applications. Authentic learning is a pedagogical approach that allows students to explore, discuss, and meaningfully construct concepts and relationships in contexts that involve real-world problems and projects that are relevant to the learner (Donovan, Bransford, & Pellegrino, 1999). Authentic learning is often referred to as students engaging in a real-world application. According to Newmann and Wehlage (1993), authentic activities are real-world tasks that a person can expect to encounter on the job, in the home, or in other social contexts.

Social FB use is high among college students, and it has been used increasingly to support learning in higher education, whether using it to replace a learning management system (Wang et al., 2013; Wang et al., 2012) or for an individual learning activity (Aubry, 2013; Miller, 2013; Shaltry, Henriksen, Wu, & Dickson, 2013). Besides, students using FB as an educational tool are

encouraged to spend more efforts to work in teams for their academic activities (Kennedy, 2000). When technology is used as cognitive tools rather than for the dissemination of content and information, it allows students to engage more meaningfully with tasks, and to assume ownership of their knowledge, rather than reproducing the knowledge of their teachers (Jonassen, 1994). These kinds of experiences enhance student motivation in learning more than in the classroom. Moreover, such virtual environments have been demonstrated to improve student involvement, engagement, satisfaction and higher-order learning such as critical thinking and collaborative problem-solving (Oncu & Cakir, 2011; Badge et al, 2012).

With over a billion of users of FB, the benefits of using these kinds of social media platforms in education are accessibility (StatisticBrain, 2013), immediate dissemination of information, fostering of interaction and collaboration, and flexibility and user-friendliness (Fontana, 2009; Gee, 2004; McCarthy, 2013). Fontana (2009) proved that rewarding student participation in social media activities has been found useful to fostering students' engagement. The same research also showed that having students interact with each other through FB can help them establish early connections which were then fostered during the face-to-face activities.

Methodology

A. Establishment of FB Page

An online sharing platform named “Benson Share” was established on March 2017 to nurture the all-round development of my students. Excluding teaching and learning packages, this page aims to enhance coaching, feedback, cases and real-life examples and experience sharing to address students' needs and potentials through the sharing of useful information and promotion of extra-curriculum activities. In particular, authentic learning opportunities about civil engineering projects are promoted via this platform apart from many other possible means, such as dissemination of information via “Poster”, “Email”, “Self-searching” and “Invitation by others”. It is believed that students can have a better support for upcoming challenges and be provided various soft skill trainings and leadership training projects opportunities, competitions and conferences, technical seminars as much as available for their attention and participation.



B. Participants

This study was carried out in Hong Kong Institute of Vocational Education (Tsing Yi) in January 2018. A purposive sampling survey in the form of online questionnaire survey with key informants by interviews was conducted, exploring the students' perceptions on the effectiveness of FB pages for bringing up authentic learning opportunities that are of concern to the students from the Department of Construction for VET. The focus of this was limited to the use of FB only. This

decision is made because FB is currently the most popular online social networking site among students (Cheung et al, 2010). Participants in this FB page was about 95 people liking this and 108 people following this which accounted for around 3 classes. After the promotion on FB, seven proposals were received with a total number of interested students of 18. Finally, one team was selected to participate each competition (two teams in total) in which both competitions asked students to use innovative ideas to solve real-world problems, and to make applications of what they learnt from the Higher Diploma course.

C. Instrument and Data Analysis

The research design for this study is based on FB statistical analysis and online questionnaire survey. The 13 questions in the questionnaire aim to explore respondents' perceptions of how FB can be used in promoting student engagement in authentic learning in term of a form of online publishing. By using purposive samplings, the online questionnaire was done by the respondents invited only. The questionnaire that researchers have constructed consisted of three parts. Part one solicited demographic information of the students and their usage of FB while Part two on the effectiveness in bringing up authentic learning opportunities. The demographic information collected were age, gender and their self-perceived learning mode within VARK model (i.e. Visual, Auditory, Read & Write and Kinesthetic learners). Part one also solicited whether or not each participant has a FB account, how often they log on to FB, whether they were part of the designated FB page "Benson Share", and how often do they read the posts or materials shared on the said FB page.

Part two comprised 5 items with a 4-level Likert Scale of 'Strongly Disagree', 'Disagree', 'Agree' and 'Strongly Agree'. The option of 'Unsure' is not included so as to ensure all participants have a stand whether to agree or disagree to a statement. Part three comprised 3 questions to allow participants to give their opinions on how FB page increases their motivation or confidence to post, to discuss issues and topics and feel encouraged by other "likings". For the analysis, percentages were employed to describe the students' views on FB use. Further focus group studies through interviews were used to support and give meaning to the quantitative data analysis and for the presentation of overall quality of students' educational experience.

D. Construction of Questionnaire Items

The 8 items from Part two and three in the questionnaire were constructed based on the research question for this study: does FB page help students in acquiring authentic learning opportunities and promoting engagement for VET?

Items in Part Two

1. Do you agree that the said Facebook page effectively introduces you authentic learning opportunities (e.g. competitions, real-life projects and so on)?
2. Comparing to "Poster", do you consider the said Facebook page more approachable to you in bringing up authentic learning opportunities?

3. Comparing to "Email", do you consider the said Facebook page more approachable to you in bringing up authentic learning opportunities?
4. Comparing to "Self-searching", do you consider the said Facebook page more approachable to you in bringing up authentic learning opportunities?
5. Comparing to "Invitation by others", do you consider the said Facebook page more approachable to you in bringing up authentic learning opportunities?

Items in Part Three

1. I feel comfortable posting my ideas or opinions on the said Facebook page.
2. I prefer discussing issues or topics on the said Facebook page instead of in a classroom session.
3. I feel encouraged by my friends "liking" my ideas or comments on the said Facebook page.

Findings and Results Analysis

A. Statistical Analysis by FB

By studying engagement rate analysis by FB, it was notably that "Post Clicks" and "Reactions, Comments & Shares" of the latest two authentic learning opportunities stood out clearly among some other posts. The activity logs of the three classes are studied in an educational context and found out that this FB page could probably be a good platform to introduce authentic learning opportunities to students.

Published	Post	Type	Targeting	Reach	Engagement	Promote
01/18/2018 11:00 am	Dear all, You are encouraged to apply the following scholarships:	📄	🌐	47	80	Boost Post
01/17/2018 5:45 pm	Dear all, You are encouraged to apply the following scholarships:	📄	🌐	43	50	Boost Post
01/16/2018 7:14 pm	各位，我們現正為建造工程系舊生會招收會員，希望可以得到你	📄	🌐	52	31	Boost Post
01/15/2018 11:15 am	While there are teams registered for other competitions, you still h	📄	🌐	40	11	Boost Post
01/04/2018 12:19 pm	URA Innovation Design Competition 2018	📄	🌐	57	261	Boost Post
01/01/2018 10:35 am	Happy New Year 2018!	📄	🌐	31	42	Boost Post
12/08/2017 2:12 pm	Innovation x Application 2.0	📄	🌐	39	295	Boost Post
11/28/2017 10:54 am	Call for suitable Year 2 students who graduated from VTC Diplom	📄	🌐	36	10	Boost Post
11/28/2017 10:44 am	A briefing session on the Alistair Harvey Foundation Scholarship	📄	🌐	32	10	Boost Post
11/22/2017 12:50 pm	The purple turtle in the picture holds a MANHOLE cover but n	📄	🌐	33	20	Boost Post
11/15/2017 7:36 pm	Call for team!!! Let approach me if you have any great ideas.	📄	🌐	38	30	Boost Post

B. Survey Results

These findings represent highlights from the survey of six selected students among a total number of 18 interested students in the population of around 95 people in this FB page. Owing to the limited size of survey in this pilot study, only preliminary results were presented since it is still testing the feasibility of the study, sampling informants and information consistency. The purposive sampling method was useful in this case because there was not enough funds and other resources. Questions that probed more specifically about whether the said Facebook page can effectively introduce students authentic learning opportunities and whether it was a more effective communication channel than other possible means (Part Two), students agree more positively on its effectiveness, indicating that they would be engaged. However, students gave a split response between those who did and did not perceive good overall quality of students' educational experience with this technology usage (Part Three). The table below has the details.

No.	Item	Cumulative Disagree (%)	Cumulative Agree (%)
Part Two			
1	Do you agree that the said Facebook page effectively introduces you authentic learning opportunities (e.g. competitions, real-life projects and so on)?	16.7	83.3
2	Comparing to "Poster", do you consider the said Facebook page more approachable to you in bringing up authentic learning opportunities?	33.4	66.6
3	Comparing to "Email", do you consider the said Facebook page more approachable to you in bringing up authentic learning opportunities?	16.7	83.3
4	Comparing to "Self-searching", do you consider the said Facebook page more approachable to you in bringing up authentic learning opportunities?	16.7	83.3
5	Comparing to "Invitation by others", do you consider the said Facebook page more approachable to you in bringing up authentic learning opportunities?	0	100
Part Three			
1	I feel comfortable posting my ideas or opinions on the said Facebook page.	33.4	66.6
2	I prefer discussing issues or topics on the said Facebook page instead of in a classroom session.	66.7	33.3
3	I feel encouraged by my friends "liking" my ideas or comments on the said Facebook page.	50	50

Open responses in a focus group study were consistent with the response items. Students were interviewed individually as we would like to prevent their responses to be potentially influenced by others. Students could see some value in the use of a tool like FB for group projects and communication, but they generally were not in favor of creating a relationship outside of the classroom setting. In summary, how HE students engage with social media for learning is a complex and contested terrain and social media's educational uses vary and many factors influence student engagement.

Conclusion

To better prepare students to develop industry-related skills and be more work-ready, it is good to provide them with opportunities that include work on real-world projects. Students of Higher Diploma in Civil Engineering from the Hong Kong Institute of Vocational Education (Tsing Yi) were encouraged to take opportunities to work on real world projects and competitions that were industry-related.

With an aim to identify suitable communication channels to promote student engagement in authentic learning, this study used online questionnaires with key informants who joined non-curricular authentic learning opportunities for comparison and analysis in this preliminary study. Statistical analysis by FB was reviewed in gauging the effectiveness in education. The end result showed the authentic learning opportunities in the said FB platform has reached more students than that of others posts. In term of "Post Clicks" and "Reactions, Comments & Shares", the authentic learning opportunities were notably admitted by students, i.e. the highest engagement level among other activities. Moreover, the students were able to successfully prove the workability of the prototype within schedule and presented their working models to the end users. Students were rewarded and recognized with the successful proof-of-concept products. The statistics gathered from the survey suggested that the students have found the communication plans to be effective, implying that student engagement has improved.

In particular, it matters whether social media is embedded in a professional-quality (i.e. a cognitive tool), what are the students' previous experiences with social media as well as what are the value they attach to it generally and specifically within a learning context. In general, while in their perception students generally appear to be positive about educational technologies, however cross-checking and validation must be done to verify certain ideas and concepts.

In order to achieve a shift to more authentic learning and making engineering real for students, it has recognized that "learning by doing" is one of the most effective ways to learn. The idea of authentic learning has wide support. With the convenient features in FB, students and teachers can experience authentic learning opportunities when they share the resources, receive the announcements, discuss the details of the projects and exchange ideas in groups.

The research managed to accomplish what it set out to do. Despite the fact that the social media use for teaching and learning has arisen problems including excessive informational convergence and proximity to entertainment content. However, the development and implementation of an authentic learning experience by making use of this technology to further enhance students' motivation and interaction should not be overlooked.

Photos of Students' Participation in Authentic Learning Opportunities



Figure 1. Guided tours and visit for participating students were arranged to better understand the problems encountered by elderly people in old districts and to learn about the real-life problems.



Figure 2. The shortlisted teams exert their best efforts to introduce their design concepts and presentations at the final adjudication.

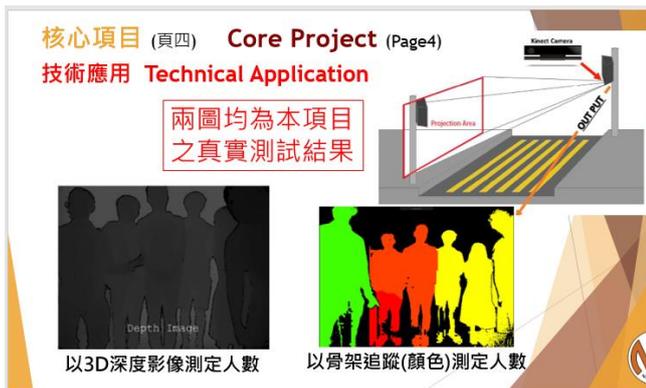


Figure 3. Participating students actualized their ideas with an innovative design prototype to improve the pedestrian crossing management.



Figure 4. A real case study was done to verify the efficiency of the prototype on reducing pedestrian delay.

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