SOCIAL NETWORK AS LEARNING TECHNOLOGY IN INFORMATION SYSTEMS EDUCATION: INSIGHT INTO STUDENT PREFERENCES

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Work-in Progress

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Abstract:

Advances in social network are increasingly becoming a valuable part of student learning experience. Yet, many practical issues such as student preferred learning materials and desired competences on social network often fall outside the scope of consideration in literature. This work in progress study is motivated by the need to integrate student preferred features into social network design and implementation. Accordingly, we intend to collect data from Information Systems students, analyze the data and use the results of our analysis to provide insight into the critical aspect of social network as a learning tool. These include the type of learning resources students perceive to be meaningful and useful as a social network learning opportunity; the competences students desire to acquire while learning with social networks; and the factors that inhibit student use of social network as a learning tool. These insights can facilitate the design, development and delivery of learning resources that are meaningful and useful to students, and support achievement of intended learning objectives.

Keywords: Social Network, Learning Technology, Pedagogy, Social Media, Social Networking

I.   Introduction

Social network (SN) is increasingly becoming an important technology used to support blended learning pedagogical approach (Irwin et al. 2012). Originally intended to use for social interaction, SN is now used as a technology to support pedagogical endeavors in higher education. For instance, preliminary results from this study show that students now use social network for sharing course materials e.g., lecture slides; collecting data for course projects; collaborating on assignments; acquiring employable skills etc. In this era of COVID-19 where social distancing is the norm, social network applications such as Facebook can be used to ensure education continuity while maintaining social distance and other COVID-19 health and safety measures. The benefits of social network in pedagogy have been reported in literature to include improved academic performance, knowledge sharing and reinforcement of students' knowledge(Irwin et al. 2012) (Dang et al. 2019; Strich et al. 2019). For instance, (Do\ugan et al. 2018) used Edmodo to teach

"Introduction to Information Technology and Algorithm" and found that students who used Edmodo as a learning technology achieved better academic performance than their peers. Despite these benefits, many higher institutions have not integrated social networking platforms as learning technologies (Sánchez et al. 2013). The factors that lead to this have not been thoroughly investigated.

In recent times, the use of social network as a learning technology has attracted considerable attention in literature, especially in Information Systems Education. Scholars have studied the evolution of social network as a learning technology. In some studies e.g., (Li et al. 2012)(Sánchez et al. 2013) the evolution, implications and roles of social network as an education technology have been analyzed. While other studies, see (Do\ugan et al. 2018)(Strich et al. 2019)(Dang et al. 2019), investigate the impact of social network platforms on student learning and academic performance. We also find studies that focus on the design and implementation of social network platforms for pedagogical purposes, e.g., see 'Evergreen LP' (Nias et al. 2017) and 'InEdUn' (Cabrera et al. 2014). These studies make important contributions on the use of social network as a learning technology. However, many practical pedagogy issues, often fall outside the scope of consideration in extant literature. For instance, the type of learning materials and competences preferred by students who use social network to learn have not been properly analyzed and studied . Even studies that are focused on developing new platforms or evaluating existing platforms give little or no consideration to how learners (who are the target audience) perceive and use such social networks.

Motivated by the need to integrate student input and preferred features into social network design and implementation, this study discusses important issues that are often neglected in literature. Specifically, this paper contributes by providing critical insights into the learning materials and professional competences (skills) preferred by students who use social network platforms for learning**.** Also, we provide insight into how students use these learning materials, as well as the factors that hinder students from using social network as learning technologies. We organize these contributions into two key research questions, as follows:

- **RQ1:** What learning materials are mostly preferred by students who use social network platforms for learning?
    - How do students use or interact with these learning materials?
- **RQ2:** Which professional competences do students desire to acquire while using social network platforms for learning?

An insight into the learning materials preferred by students is very critical to pedagogy. This is because learning materials are very useful artifacts that makes teaching and learning easier (Georgieva et al. 2018). For most students, learning materials (e.g., lecture notes/slides) serve as additional reading or reference sources that help them to consolidate what was taught in the classroom. Student learning beyond the classroom is usually supported by learning materials made available by instructors through learning management systems. More so, some learning materials such as solution to past questions can help students to prepare for assessment, while others e.g., project descriptions and take-home exercises can help students to acquire competences such as critical thinking and problem solving. Additionally, learning materials are used by instructors to convey difficult concepts to students, without them, teaching and learning process can be challenging. From experience, we know that students hardly use learning materials they dislike or deem unprofitable. Instructors who understands students' preference in this regard are more likely to design and provide learning materials that will be beneficial and useful to students. Equally, IS educators and instructors should be aware of the competences preferred by students who use SN as learning technology. In this way, they can design academic programs, courses and learning materials on social network to deliver the desired competences to students. Competence (skills, knowledge and dispositions) development plays a vital role in pedagogy. Academic programs and courses are usually designed to help students acquire professional competences that are often required for employment and career success (J C Nwokeji et al. 2019).

II.   Literature Review

Blended Learning and Social Network

Blended learning (BL) is a popular pedagogical approach that combines face-to-face instruction with e-learning or online instruction (Dziuban et al. 2018). Even though there are conflicting definitions of BL found in literature (Al-Samarraie and Saeed 2018; Dziuban et al. 2018; Oliver and Trigwell 2005; U\ugur et al. 2011), scholars generally believe that BL involves face-to-face instruction and technology-mediated instruction. Technology-mediated instruction is delivered online using information technologies e.g., learning management systems, discussion boards, etc. (Al-Samarraie and Saeed 2018). BL is beneficial to pedagogy in many ways, including support for collaborative learning and information sharing, easy access to learning materials, and support for competency development (Al-Samarraie and Saeed 2018)(Wichadee 2017). Traditionally, BL relies on learning management systems (LMS) e.g., Blackboard and Moodle and other technologies that are primarily designed for education and learning purposes (Arnold and Paulus 2010). However, the emergence of new technologies such as social networks are now being used for technology-mediated instruction (Irwin et al. 2012).

Social network can be defined as a social structure consisting of nodes and links, the nodes are autonomous agents e.g., students while the links describe the types of interaction or relationships that exist between the agents (Dang et al. 2019; Strich et al. 2019). Software products e.g., Facebook, Twitter, LinkedIn, and YouTube, that enable social network are generally referred to as social networking platforms or applications. A typical social networking platform provides features that allow social networking actors, or group of actors, to share information (Strich et al. 2019). Some of these features include microblogging, communication features, chat functions, and video and voice calling. Others include discussion boards, tagging, likes, and file upload (Arnold and Paulus 2010). In recent times, the use of social networking platforms has been expanded to serve specialized social purposes (Manca and Ranieri 2017). Currently, there are social networking platforms designed and implemented for the following purposes: professional and career (e.g., LinkedIn, Meetup and Xing); Research and academic (e.g., ResearchGate, Academia.edu, and Google Scholar); etc. In addition to the specialized purposes they serve, the majority of social networking platforms are applicable to teaching and learning. For instance, while YouTube is primarily used for entertainment, many teachers have used to it to share video lectures and other learning materials to students.

Learning Materials and Social Networking Platforms

The evolution and use of learning materials in pedagogy have been well researched in extant literature (Bundsgaard and Hansen 2011; Georgieva et al. 2018; Van Gog and Sweller 2015; Harsono 2015). For the purpose of this study, we build on the definition given by Jeppe and Illum (Bundsgaard and Hansen 2011) and define learning materials as artifacts (i.e., tangible objects) that facilitate teaching and learning in a given discipline. Popular examples of learning materials include diagrams, digital textbooks, course syllabus, video lessons, see Figure 1. Learning materials can be digital or non-digital(Georgieva et al. 2018). The idea of digital learning materials is discussed in (Georgieva et al. 2018) to include all learning materials that are designed, distributed and used electronically, for example see Figure 1. Other learning materials in hardcopy format, such as textbooks and handouts are called non-digital learning materials. Figure 1 provides examples of learning materials categorized into digital and non-digital learning materials. The first column of Figure 1 shows digital learning materials while the last column shows non-digital learning materials.

The ability to use learning materials on social network depends on many factors such as copyright permissions, the capability and scope of the social networking platform, and the size of the material itself. Some social networking platform such as Twitter provide capability that support only microblogging, and thus are not suitable to share learning materials with voluminous texts and large size. Similarly, YouTube is only suitable for video contents.
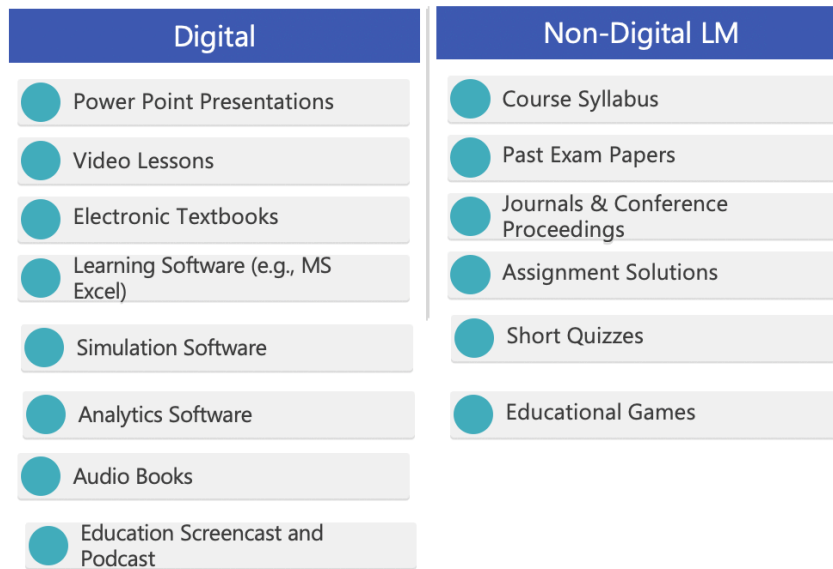
Figure 1: Examples of Learning Materials

Competences and Social Networking Platforms

Competences are set of skills, knowledge and disposition required for career success in a given profession (J C Nwokeji et al. 2019; Sabin et al. 2018). Popular examples of competences include critical thinking, problem solving, systems design, etc. Competency development and awareness play a very vital role in curriculum development (Clear et al. 2020). More so, competences are vital to success and career development of students. For instance, during job interviews, employers often require candidates to demonstrate competences in a given area, as a criterion for employment. Hence, competency acquisition should be an integral part of student learning experience. Although a wide variety of competences are available across professions, for the purpose of this study, we focus on competences that are applicable to Information System Profession. Currently, competences acquisition and development are rapidly being studied in literature. Nonetheless, it is hard to find studies that investigate the type of competences students desire to acquire while learning with social networking platforms or how social networking platforms help students to develop computing and engineering competences.

III.   Methodology

Data Collection and Analysis

In order to answer our research questions and make the intended contribution, we plan to collect data (both quantitative and qualitative) from students in higher institutions. In particular, our study participants target are graduate and undergraduate students in universities and colleges that offer information systems as a major and/or minor. To collect data, we will use a Likert-scale questionnaire designed with Survey Monkey Software as our instrument. Validation of our instrument will be by means of Cronbach's alpha. We intend to use the designed survey to collect the following data: (a) demographic or background information (e.g., field of study, educational level, age, and gender). (b) The learning materials student prefer to use on various social networking platforms. In our survey, we intend use the learning materials identified from literature, see Figure 1, Section 2.2. (c) How students use (e.g., share, ready, download) these learning materials on social networking sites. (d) The competences students prefer to develop or acquire on social networking platform. (e) Prevailing issues in using social network as learning technology. We focus on the

following issues: factors hindering students from using social network for learning; student communication model; student preferred devices and social networking platforms. Collected quantitative data will be imported into statistical tools such as JAMOVI or JASP and analyzed using suitable statistical methods. Qualitative data will be analyzed using thematic analysis with the help of tools such as NVivo. Results from our data analysis will be discussed and published **on a later date.**

IV.   Conclusion and Future Work

Current literature on the application of social network to pedagogy focus on areas such as design and implementation of social networking educational applications, evaluation of these applications and the benefits thereof. However, students input, and preference especially those relating to desired learning materials and competences, have not been part of the discourse and are often neglected in literature. In this ongoing research, we aim to provide immediate and strategic insight into how student preference and input can be incorporated into social networking research. Particularly, we focus on the learning materials and professional competences (skills) preferred by students who use social networking platforms for learning. Also, we provide insight into how students use these learning materials, as well as the factors that hinders students from using social networking as learning technology. Our future work will focus on data collection, validation of our research instrument, data analysis and reporting the results of our data analysis. Before we start our data collection, we will conduct a pilot study to ensure good quality of data and participants. Additional future work will evaluate the compatibility of social network with various instructional methods used in IS education. For instance, we will attempt to understand if instructional methods such as flipped classroom (Joshua Chibuike Nwokeji et al. 2019; Nwokeji and Holmes 2017) and project-based (Aqlan and Nwokeji 2018; Nwokeji et al. 2018; Nwokeji and Frezza 2017) learning can be effective when social network is the learning technology. We plan to publish the results from our future work in IS-focused journals and conference proceedings.

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VI.   Appendix

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