Examining the Feasibility of Incorporating Social Media Platforms into Professional Training Programs

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Keywords: Social Media Application, Pre-Service Teaching and Learning, Professional Training.

Abstract: The efficacy of incorporating social media platforms into professional training programs remains uncertain and ambiguous. To optimize the effectiveness of utilizing social media platforms in such programs, it is imperative to comprehend the requirements and influences of instructors and organizations, as well as the preferences and needs of the target audience. This necessitates finding a harmonious balance between leveraging the interactive features of social media and effectively mitigating potential challenges. That is why this research adopts a qualitative case study approach in order to examine the feasibility of incorporating social media platforms into professional training programs. The study involved pre-service instructors from three universities in Saudi Arabia which pursued their studies at the faculty of Computer Sciences and engaged in training courses. The findings of the study indicate that, Twitter emerges as the predominant social media application employed for educational and learning endeavours on a daily basis. The level of belief in the efficacy of social media applications as effective learning environments is substantial. Despite the considerable difficulties individuals encounter in communicating with their peers and professionals during training courses, the individuals involved persist in their efforts. The influence of social media applications on the sharing of learning content with colleagues is significant, indicating a substantial impact. In addition, the utilization of social media applications and the act of sharing content with colleagues have a significant impact on the learning process of pre-service teachers.

1 INTRODUCTION

In contemporary society, social media technologies have emerged as the prevailing means of information dissemination and interpersonal communication. In his work, Selwyn (2012b) employed the term "social media "to denote digital platforms, both online and mobile, that facilitate communication, sharing, collaboration, publication, and interaction among users. According to a study conducted by Madden et al. (2013) and published in the Pew Research Centre Survey, it was found that 73% of Internet users actively participate in activities such as sharing ideas, generating audio and video content, and exchanging content with one another. Within the realm of education, social media applications are regarded as the most effective platform for fostering collaboration between educators and students (Alshehri and Lally, 2019). This is attributed to the inherent features of these applica-

tions, which have the potential to enhance the learning experience (Junco et al., 2011). According to Greenhow and Lewin (2016), educators can utilize social media applications as a means to instruct and educate students, given that students have integrated these applications into their daily routines for peer communication. According to the study conducted by Alyoussef et al. (2019), the utilization of social media platforms has the potential to positively enhance the process of teaching and learning. This is primarily attributed to its ability to potentially enhance academic achievement and foster increased engagement among students. Furthermore, educators have the ability to utilize social media platforms as a means of establishing adaptable educational settings (Saini and Abraham, 2019). The incorporation of social media into a well-organized and inclusive learning management system (LMS) can facilitate a harmonious integration of the advantages offered by social media platforms and the regulated learning atmosphere essential for professional training initiatives. According

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to Saini and Abraham (2019), the utilization of social media technologies has the potential to improve the teaching and learning process, thereby aiding the career advancement of current teachers and equipping prospective teachers with the necessary skills for professional training. Hence, the enhancement of professional learning for pre-service teachers can be achieved through the integration of social media platforms within their professional training programs, thereby facilitating the establishment of online communities for knowledge-sharing (Donelan, 2016; Vie, 2017; Saini and Abraham, 2019; Dragseth, 2020).

Investigating the concerns surrounding the effectiveness of social media platforms in professional training programs can yield significant insights into the obstacles and apprehensions that organizations and instructors may encounter when employing these platforms for training endeavours (Purwanto et al., 2023). Regrettably, without identifying and analyzing the areas that are confronted with challenges, comprehending the underlying issue and effectively addressing the research problem will prove to be challenging. Through conducting extensive research in these specific areas, individuals can acquire a comprehensive understanding of the various issues pertaining to the feasibility of incorporating social media platforms into professional training programs. This will enable them to make well-informed decisions regarding the implementation of such platforms (Al-Qaysi et al., 2023). Therefore, this study aims to employ a "Case Studies" methodology in order to examine instances where organizations or institutions have integrated social media into their professional training programs. We examine the individuals' experiences, achievements, and setbacks in order to acquire a more profound comprehension of practical difficulties and results.

2 RELATED WORK

Social media plays a pivotal role in fostering educational development. Social media applications facilitate the connection between faculty and students within the educational sphere, regardless of geographical location or time constraints. This connection serves the purpose of exchanging information and engaging in collaborative projects.

According to Castro-Romero (2015), empirical evidence suggests that the utilization of social media platforms can augment students' educational experiences and foster their engagement with both peers and instructors. Researchers view social media tools as effective catalysts for advancing teaching and learn-

ing practices, particularly in terms of enhancing receptiveness and fostering sociability. Moreover, social media is commonly perceived as a platform for individuals to disseminate, engage in discourse, and exchange knowledge or concepts, thereby potentially revolutionizing pedagogical approaches to foster a more amicable, inclusive, and collaborative learning environment. Previous research conducted by Sobaih et al. (2016); Chugh and Ruhi (2018); Al-Maatouk et al. (2020) has examined the utilization of social media platforms as educational tools within higher education institutions (HEIs). The researchers have made a recommendation for academic and pre-service teachers as well as students to incorporate the use of social media platforms in order to enhance their educational objectives.

Nevertheless, the professional learning community has encountered difficulties with regards to in-person engagement, as well as challenges related to time and location (Wang et al., 2017). According to Tsiotakis and Jimoyiannis (2016), the utilization of social media technologies has the potential to overcome geographical and temporal limitations, thereby facilitating communication within an online professional learning community platform. This feature facilitates the ability of trainees to engage in asynchronous communication and exchange teaching practices as necessary. Hence, it is evident that the utilization of an online professional learning community for teacher training has the potential to address the challenges posed by geographical constraints and limited opportunities for collaboration, thereby enhancing professional development. Almuqrin and Mutambik (2021) contend that a dearth of scholarly investigations exists concerning the assessment of the effectiveness of extant social media platforms in knowledge formation and their contribution to the advancement of professional development.

The objective of the current investigation is to ascertain the extent to which pre-service educators utilize social media platforms for educational purposes during summer training, with the aim of enhancing the learning and instructional processes. Furthermore, this research has the potential to make a valuable contribution towards the integration and utilization of these technologies in the context of professional development.

For this reason, this research proposes a conceptual framework presented in Figure 1. The proposed framework aims to establish relationships among three key variables highlighted in the works of Carpenter et al. (2023) and Ali and Qazi (2023). These variables include "Social Media Applications", "Pre-service Teachers Training" and "Sharing Educational

Content". These variables are conceptualized for the purpose of establishing the following relationships:

• The relationship between the perception of social media applications as effective learning environments and the act of sharing content with colleagues via these platforms.

• The relationship between social media applications as an effective learning environment and the enhancement of learning among pre-service teachers.

• The relationship between the utilization of social media applications for sharing educational content among pre-service teachers and the enhancement of their learning.

As a result, three main hypotheses are formulated as follows:

H1: Social Media Application as a good learning environment influence sharing learning content with colleagues.

H2: Social Media Application as a good learning environment influence Pre-Service Teachers' learning.

H3: Sharing learning content with colleagues on Social Media Application as a good learning environment influence Pre-Service Teachers learning.
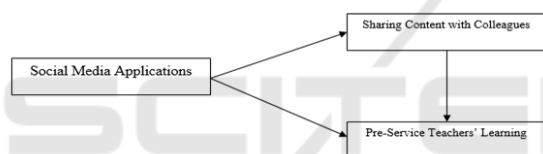

Figure 1: The proposed conceptual framework.

3 RESEARCH METHODOLOGY

The research methodology employed in this study encompasses the systematic approach to conduct a literature review, gather data, and analyse the collected data. This study employs a qualitative case study methodology to investigate the viability of integrating social media platforms into professional training programs. The scope of this study encompasses all universities that provide professional training and employ "Social Media" as a means of instruction. The term "professional training programs" pertains to a range of educational offerings, such as brief courses, workshops, certifications, or other formats, which are tailored to meet the specific requirements of the university. The study included pre-service teachers at the Computer Sciences departments of three universities in Saudi Arabia who had participated in professional training and completed training courses.

3.1 Data Collection

A structured questionnaire was designed as the primary instrument for data collection. The research conducted in this study was granted approval by Newcastle University's Research Ethics Committee, under the reference number 20-ALH-045. This is the junction at which the research leveraged the "Quantitative Case Study" approach, employing a structured discussion framework encompassing open-ended and closed-ended questions as data collection. The questions were formulated according to the studies conducted by Sobaih et al. (2016) and Alshehri and Lally (2019). The survey comprised two distinct sections. The initial section comprised two demographic inquiries pertaining to the participant's gender and the name of their university. The second section of the study consisted of six structured questions, three questions for pre-service teachers concerning their favourite of social media application for learning and teaching purposes, to what extent they believe that social media applications are good learning environments and forms of their usages. In addition, an open-ended question involved describing the interface and features of social media applications used by pre-service teachers to communicate with their classmates and professors. Moreover, 2 questions measured on a Likert-item basis (ranging from 1 = Strongly Disagree to 5 = Strongly Agree, and 1 = Very Unhelpful to 5 = Very Helpful) were about preservice teachers' views on the use of social media applications for improving the learning experiences as well as their opinion about the usefulness of some existing social media platforms they used to communicate with peers and professionals. Participants provided their responses to the questionnaire through the Survey Monkey platform (SurveyMonkey, 2021), accompanied by an electronic consent form that required their signature. A comprehensive sample of 67 questionnaires was gathered for analysis. Statistical analysis was performed using SPSS software (version 27) (Statistics, 2013).

4 ANALYSIS AND RESULTS

The present study utilizes a research analysis framework that includes descriptive and inferential statistics, as well as an examination of users' perceptions. Descriptive data were generated for all variables in the study's first section. In the subsequent section, inferential data analysis was conducted, specifically utilizing a Chi-Square Test of Independence to evaluate the association between variables and determine if

the study dimensions exhibited a normal relationship. A p-value less than 0.05 was deemed statistically significant.

4.1 Demographics Analysis

Table 1: Demographics analysis of pre-service teachers.

Demographics		N	%
Gender	Male	25	37
	Female	42	63
University Name	Jeddah University	56	84
	Others	11	16

Table 1 displays the distribution of participants according to various demographic variables. According to the information in the table, it was discovered that most of the responses were from Jeddah University, which suggests that the study outcomes will be of substantial interest to Jeddah University. When this implementation has been completed, it will be available for later replication by other institutions.

4.2 Hypothesis Testing

The study's findings offer a crucial viewpoint on the utilization of social media in the field of education as a whole, and more specifically in relation to professional training. The conclusion derived from the empirical testing of the hypothesis represents the outcome of the investigative process. The findings indicate that Twitter is the most commonly utilized social media platform for educational and learning purposes on a daily basis, followed by Instagram, Telegram, YouTube, and WhatsApp, in sequential order. It is imperative to bear in mind that the positive rating serves solely a descriptive function (Pimentel, 2010). Moreover, this implies that the use of social media applications has the potential to augment educational prospects. The results also indicate that individuals predominantly employ social media platforms for educational and learning objectives, particularly for tasks and activities related to information retrieval, followed by browsing to acquire knowledge. This feature has the potential to enhance communication among peers and professionals, as evidenced by the following response: "I use WhatsApp and Twitter to share content and information, [which] makes it easy to connect with people at any time". An additional attribute that could enhance communication is a user-friendly interface, thereby improving usability.

4.2.1 Sharing Learning Content

The first hypothesis was conceived with the intention of investigating the impact that various social media applications have on the rate at which educational material is shared among co-workers. The findings of the experiment that tested the hypothesis indicate that the Chi-square test demonstrates a statistically significant correlation between the perception of social media applications as effective learning environments and the act of sharing content with colleagues through these applications, as shown in Figure 2. The Chi-Square test yielded a P-value of 0.006, which is significantly lower than the threshold for statistical significance, which was established to be 0.05. As a result, hypothesis 1 is accepted.
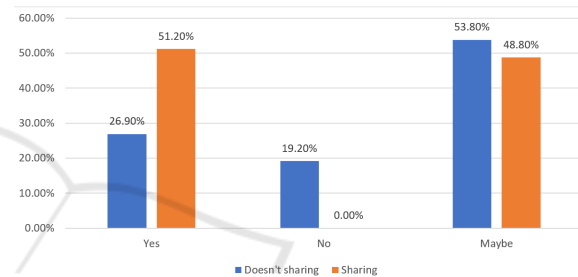

Figure 2: The frequency of sharing content with colleagues through social media applications.

According to the findings, more than half of the participants (51.2%) who engage in content sharing with co-workers via social media platforms expressed agreement with the idea that these platforms offer a suitable atmosphere for learning. On the other hand, 48.8% of participants who engage in material sharing with colleagues through social media platforms maintained a neutral view regarding the establishment of a constructive learning community through these platforms. This suggests that people who participate in higher levels of content sharing on social media platforms are more likely to regard social media as an environment that is conducive to educational goals (see Figure 2).

4.2.2 Pre-Service Teachers' Learning

The second hypothesis was conceived with the intention of conducting research into the ways in which pre-service teachers can benefit from using social media applications to improve their own learning. The results of the testing of the hypothesis indicate that there is a statistically significant correlation, as established by the Chi-square test, between the perception of social media applications as a suitable learning environment and their potential to promote the learning

of pre-service teachers. The Chi-Square test produced a P-value of 0.004, which is significantly lower than the threshold of 0.05 significance that was set beforehand. As a result, hypothesis 2 is accepted.
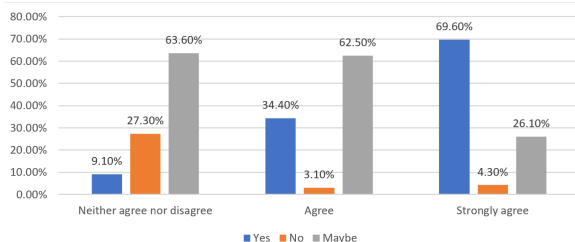

Figure 3: The frequency of Social media applications as a good learning environment on the improvement of pre-service teachers' learning.

According to the findings, a sizeable majority (69.9%) of participants who strongly agreed with the concept that social media applications have the ability to enhance their learning also held the belief that these applications can create an environment that is conducive to learning. This finding is supported by the fact that participants expressed strong agreement with the proposition that social media applications have the potential to enhance their learning. Approximately 62.5% of the respondents who agreed with the statement that social media applications could improve their learning experience had a stance that was neutral towards the question of whether or not these applications can actually provide a learning environment that is favourable to learning. This suggests that those pre-service teachers who had a favourable impression of social media as an educationally conducive platform were more likely to believe that it may improve their own learning experiences (see Figure 3).

4.2.3 Social Media Applications

In testing hypothesis 3, it was framed to investigate the impact of sharing content with colleagues and the improvement of pre-service teachers' learning. The results obtained from the hypothesis testing indicate that there is a statistically significant association between pre-service teachers' utilization of social media applications to share content with colleagues and the potential enhancement of their learning experience. The p-value obtained from the Chi-Square test is 0.039, which is less than the conventional significance level of 0.05.

The data indicates that a majority of participants (53.7%) who shared content with their colleagues through online platforms agreed that social media applications have a positive impact on the learning of pre-service teachers (see Figure 4). Additionally, a
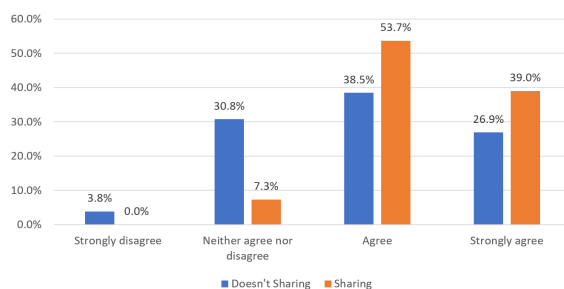

Figure 4: The frequency of the sharing content with colleagues through social media applications and improving pre-service teachers' learning.

significant proportion (39%) of participants strongly agreed that online platforms contribute to the improvement of pre-service teachers' learning. The findings indicate that there is a positive correlation between the extent to which pre-service teachers engage in content sharing on social media platforms and their perception of the educational benefits derived from such platforms.

5 DISCUSSION

Social media platforms have been identified as virtual interactive communities that possess the potential to serve as valuable learning tools within higher education institutions, with a particular focus on professional development (Sobaih et al., 2016). The present study aimed to examine the utilization of social media applications among pre-service teachers in the context of higher education, specifically focusing on their application for learning and teaching purposes. The findings of this survey indicate that Twitter was the predominant social media platform employed by pre-service teachers for educational purposes. Research conducted by Sobaih, Alwagait, and O'Keeffe has highlighted the educational and instructional benefits of Twitter as a valuable learning tool (Alwagait et al., 2015; Sobaih et al., 2016; O'Keeffe, 2019). This phenomenon occurs due to its ability to foster active participation within a digital community of individuals who share a common professional interest, thereby offering valuable insights and knowledge exchange opportunities to improve their respective competencies (Benko et al., 2016). Therefore, it is regarded as an interactive community that facilitates the exchange of knowledge within an educational setting. The present study reveals an intriguing finding: pre-service teachers expressed consensus regarding the efficacy of social media platforms as conducive environments for both learning and teaching. This result is consistent with studies conducted by Alshehri and

Lally (2019). Contrary to the belief that social media is a disruptive technology (Selwyn, 2012a).

Furthermore, the findings of this study suggest that pre-service teachers expressed favorable attitudes towards the utilization of social media platforms as a means of enhancing teacher training and facilitating an enhanced learning experience. Prior studies have demonstrated that the utilization of social media platforms for educational purposes can contribute to the enhancement of learning outcomes for pre-service teachers and the improvement of teaching practices among educators in higher education (Sobaih et al., 2016; Basu, 2017; Al-Maatouk et al., 2020; Chugh et al., 2021). Moreover, the findings from the survey conducted among pre-service teachers revealed the efficacy of current social media platforms employed for peer and professional communication within the training program. Hence, it is imperative for individuals to utilize social media platforms as a means to disseminate knowledge and engage in communication with both peers and professionals, thereby surmounting the temporal and spatial constraints encountered during their training. The findings of this study align with prior research that has demonstrated the predominant adoption of social media as a communication tool for socializing purposes (Datu et al., 2012; Alabdulkareem, 2015; Komaki and Igawa, 2017; Ogbonnaya, 2019).

The results indicate that pre-service teachers utilize social media platforms for various educational purposes, including information retrieval, knowledge acquisition, and knowledge sharing. This facilitates their ability to collaborate and actively participate with their peers, resulting in a beneficial influence on their academic accomplishments (Chugh and Ruhi, 2018; Alshehri and Lally, 2019; Saini and Abraham, 2019). Furthermore, the present study revealed a statistically significant correlation between the act of sharing educational content with colleagues via social media applications and the enhancement of learning outcomes among pre-service teachers. The findings indicated that a significant proportion of respondents concurred that the utilization of social media platforms for the purpose of disseminating content or knowledge had the potential to enhance the educational encounters of pre-service educators. A comparison of the findings with those of other studies confirms that using social media for learning purposes and interaction with peers and teachers positively affects their academic performance (Ansari and Khan, 2020). This implies that the act of exchanging ideas and information has the potential to facilitate rapid and effortless acquisition of knowledge, thereby enhancing the process of learning. Furthermore, inte-

gration these technologies would lead to transformative and significant modifications in the realm of collaborative learning within higher education, specifically in the context of professional training. The study revealed a statistically significant correlation between the perception of social media applications as effective learning environments and their actual impact on learning outcomes.

To enhance the educational experiences of pre-service teachers, it is imperative for pre-service teacher training programs to incorporate these technologies within their curriculum in order to enhance instructional practices. Collaborative learning is a recognized educational approach that encompasses the acquisition of knowledge through active participation in diverse activities within our everyday lives (Ansari and Khan, 2020). Furthermore, it can be argued that these educators commence instruction in computer science at an earlier stage, which consequently renders them more inclined to embrace technological means for interpersonal communication with their peers. According to Castro-Romero (2015), the utilization of social media platforms has the potential to augment students' educational experiences and foster their engagement with both peers and instructors. This is achieved through the facilitation of shared content, discussions, and communication within virtual learning communities.

The findings of the study indicate a significant correlation between the utilization of social media platforms for the purpose of sharing content among colleagues and the establishment of a conducive learning environment. Nevertheless, it is imperative to acknowledge certain factors that may exert an influence on the efficacy of these technologies. These factors, including ease of utilization, utility, and motivation, warrant careful consideration (Saini and Abraham, 2019). This study examines the perspectives of pre-service teachers regarding the utilization of social media applications during summer training in Saudi universities, specifically within the faculties of computer science, with the aim of enhancing teaching and learning practices. Consequently, there is a growing impetus to promote the incorporation of these technologies into professional development programs, with the aim of enhancing the competencies of both pre-service and in-service educators. The research findings present a persuasive case for the incorporation of social media within the educational setting to enhance teaching and learning. The application of social media and its diverse elements offers new prospects for promoting sustainable professional development and lifelong learning. Within this particular context, individuals have the opportunity to access support and

guidance by engaging with virtual communities that are specifically focused on educational endeavours.

In general, the findings of this survey suggest that pre-service educators concur that utilizing social media platforms to exchange information with their colleagues would enhance their educational journey, as supported by the statistical correlation. Moreover, the authors posit that social media applications can serve as a robust educational platform for enhancing the learning experiences of pre-service teachers, as supported by the statistical correlation. Integrating these technologies with enhancing professional skills can facilitate the resolution of obstacles related to temporal and spatial constraints. Therefore, it is accessible at any given time and location.

The development of professional development programs for pre-service teachers in the School of Computing is a crucial undertaking, as highlighted by Qian et al. (2018). This need is particularly evident in the context of Saudi Arabia, as noted by Amasha and Alkhalaf (2016) and Almuqrin and Mutambik (2021). It is advisable to conduct further research in order to gather additional data from a broader sample of students across multiple institutions, thereby enhancing the robustness and applicability of the findings. It is not advisable to extrapolate these findings to dissimilar contexts.

6 CONCLUSIONS

This study investigates the usage of social media platforms by pre-service teachers within the framework of learning and teaching. The objective of this study was to enhance comprehension regarding the prospective application of social media platforms as educational instruments. It is imperative to approach the interpretation of the study's findings with meticulous attention to specific limitations. Regarding the matter of sample representation, it is crucial to acknowledge that the sample utilized in this study consists solely of pre-service instructors hailing from three universities situated in Saudi Arabia. Moreover, it is crucial to recognize that the perceptions and experiences of the pre-service teachers involved in this research may differ from those of pre-service teachers originating from diverse geographical locations and nations. It is imperative to take into account the variations in educational systems and professional training across different countries. In relation to prospective endeavours, these discoveries could serve as a catalyst for exploring professional development within the realm of higher education, particularly within the School of Computing. This could involve establishing an online

platform to facilitate the exchange of teaching experiences among novice and seasoned academics.

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