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**SOCIAL MEDIA USAGE AND EDUCATIONAL PERFORMANCE:
THE MEDIATING ROLE OF CREATIVITY**

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Abstract

The main objective of this study is to examine the mediating effect of creativity on the relationship between social media usage and educational performance among undergraduate students. A research model was proposed with the support of social learning theory. Several hypotheses were formulated based on the proposed research model. Paper-based survey questionnaire method was designed and used for fieldwork. A total of 160 usable questionnaires were collected for statistical analysis. A two stage analytical approach was conducted by using Partial Least Square structural equation modelling. Based on the statistical result, social media usage is positive significantly related to creativity and educational performance. Apart from this, creativity is also positive significantly related to educational performance. We also found that creativity is significantly mediated the positive relationship between social media usage and educational performance. The findings of this study offered useful insights to universities management and academicians on how to improve educational performance among students.

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Keywords: Social media usage, social network, creativity, educational performance.



1. Introduction

The latest development of communication technologies has been embedded inside every user's life including its usage in education sector. Very often, educational institutions are highlighting their involvement in educational technologies as part of their promotional activities to increase student enrolment. The use of social media has been commonly used as a part of teaching and learning to enhance overall educational experience. The evolvement of teaching and learning includes the involvement of online platform beyond traditional classroom teaching characterize the modern teaching and learning process. The modern pedagogy demonstrates the evidence of increase in students' engagement, understanding of the particular topics, enhancing creativity skills and educational performance. Conversely, the traditional instructional manner is being criticised as being not flexible enough to accommodate individual students' needs. The traditional existing model of teaching and learning are considered to be too formal and not interesting enough to stimulate their interest in learning. The new phenomenon of teaching and learning is characterized by social media usage, media literacy skill, peer based learning etc. Nonetheless, the growing usage of e-learning is with controversy. Using social media in teaching and learning demonstrated that many online platforms are merely used for engagement activities. The usage of social media for non-academic work are adversely affecting the academic studies (Ravizza et al., 2014). Hence, some students who utilise social media in their learning process are not contributing to their education performance. Although the usage of social media is widely recognised as a tool to facilitate students learning; however, the exact influence of the usage of social media on the educational performance is not properly explained without the bridging effect of creativity. This research outlines the influence of social media usage towards educational performance through creativity.

1.1. Literature Review

1.1.1. Social Media Usage and Creativity

Social media usage that has been serving distinctive knowledge management processes is useful for generating creativity (Sigala & Chalkiti, 2015). However, the creativity by integrating individual with social cognitive process (e.g., obtaining, discussing and debating information with others, generating new or co-creating knowledge) is much greater than does the individual internal cognitive process (e.g., seeking, storing, reading and categorizing information) (Sigala & Chalkiti, 2015). Recent studies provide little evidence linked to the potential of social media usage for creativity enhancement. Cao and Ali (2018) revealed that ability of integrating external knowledge with the existing knowledge possessed (absorptive capacity) could be enhanced when using social media in team work context at workplace as the social media provide opportunity for exchanging knowledge and transferring information. Users could explore, transform and exploit the knowledge in their learning process. The absorptive capacity enables team to perform creatively. The capacity is also strengthen the capability of knowledge creation for creative performance.

Other recent study has also indicated individuals' creativity could be enhanced when using social media (Hu et al., 2017). Despite of positive linkage, the study is more emphasis on the creativity driven by the diverse cultural knowledge elicited from the social network among international students which is lacking of generalizability for students who are expected to possess knowledge beyond cultural perspective

in their learning process. Thus, further examination on the linkage among students with diverse programs of study would provide broader view on the role played by the social media throughout the learning process. It is expected that students' creativity could be enhanced when utilize social media that provides students opportunity to interact with their external environment and has greater exposure in their learning process. Thus, following hypothesis is formed:

Hypothesis 1: Social media usage has positive relationship with students' creativity.

1.1.2. Creativity and Educational Performance

Parkhurst (1999) defines creativity as "the capability to generate new solutions for hitherto unsolved problems, to develop novel solutions for problems others have solved differently, or to generate novel and original products". Past empirical studies (e.g. Chamorro-Premuzic, 2006; Atwood & Pretz, 2016; Lanawati & Thomas, 2018) reveal obfuscated and equivocal pictures specifically on the relationship between creativity and educational performance (Gajda et al., 2017). Grigorenko et al. (2009) found that creativity is having little or no correlation with educational performance. Nori (2002) revealed that creativity is not significantly related to educational performance. Whereas, several empirical studies indicate that creative students scored higher on the measures of their educational performance as creativity enhance student's cognitive ability in resolving practical difficulties which directly increase the students' self-confidence level (Naderi et al., 2009). This result was supported by Chamorro-Premuzic (2006) who found that creativity predicts student's educational performance especially in the assessment forms that are 'heuristic' in nature.

Hypothesis 2: Creativity is positively related to educational performance.

1.1.3. Social media usage and Educational Performance

The adoption of digital technologies in social media has been widely accepted in educational settings (Aviles & Eastman, 2012). As such, the emergence of social media has shifted the paradigm of education today. For instance, the interactive mobile technologies that are under the domain of Web 2.0 communications include social networking, wikis, blogs, etc. Recent empirical research conducted by Bal and Bicen (2017) reveal that social media is effective in assisting students to acquire new information and provide integrative learning which ultimately lead to their academic success.

Similarly, Huang et al. (2011) find that weblogging system encourages students to improve their understanding through course key information sharing and express their thoughts in which the system creates an environment with less pressure from the peers and time. Conversely, Gingerich and Lineweaver (2014) find that text messaging by students during lecture class hinder students' comprehension and retention of lecture content which adversely affect student's educational performance. As Friesen and Lowe (2012) contend that social media only concentrates on social selectivity, discretion, privacy and detachment by simply allowing users to "like", "digg" or even "dislike: or "unfriend" fail to serve the interest and priorities of learning. Such equivocal findings from past research have transpired us to gauge the relationship between social media and student's educational performance as little is known hitherto especially the nature of relationship between these two distinct constructs which remains amorphous in the literature.

Hypothesis 3: Social media usage is positively related to educational performance.

1.1.4. Mediating Effect of Creativity between Social Media Usage and Educational Performance

Social media tools (e.g., facebook, what's app, Instagram, twitter and etc) allow the web users to demonstrate their creative, publication and critique skills which are commonly used by people in developed nations to produce and distribute their products. In higher educational industry, utilizing new social media in teaching can promote creativity enabling students to be more digitally literate, independent in learning, collaborative and communicative, and critical in thinking (Allen et al., 2012). In the 21st century, creative teaching is a complex phenomenon as Mishra et al. (2011) highlight that it is pivotal for the teachers, especially those new teachers to be creative with open-minded attitude and willing to take risk to embrace new knowledge. The emergence of social media brings possibilities for individuals to be creative. In classroom terms, it is essential for teachers to fully understand specifically on how to channel knowledge to the students by presenting it in a creative manner. However, the relationship between technology (social media) with creativity remains rudimentary particularly in educational context (Mishra, 2012). How do we draw the link between social media and creativity? We hereby contend that there are two important guises which need concentrations. Firstly, the educators must be creative in diffusing knowledge with technology adoption, especially in teaching specific content. There are many digital tools (e.g., Twitter, Facebook, smart phone and etc) are already available have not been designed for teaching and learning purposes. Hence, it could potentially become an opportunity for teachers to utilize these already available digital tools to be creative in their teaching purposes (Koehler et al., 2011). Secondly, we also acknowledge the vitality of social media as a tool to construct, communicate, represent, and share knowledge with or among students which ultimately lead to their creativity.

Concerning the link between creativity and educational performance. We believe that the link between these two constructs is rather straightforward. Creativity is quite difficult to assess and evaluate due to the open-ended nature. However, when we envisage and acknowledge creativity is an integral part in teaching and learning process, generating a range of assessments is thus pivotal. Unfortunately, little is known to date on how social media and creativity co-exist which affect student's academic performance (Henriksen et al., 2016). In the past, several studies reveal that students with high creativity scored higher in foreign language (Pishghadam et al., 2011). Early research conducted by Bentley in 1966 reveal that undergraduate students who are creative in terms of their divergent thinking and evaluation abilities are more flourishing in their academic than those students who do not have creative abilities – cognition, memory and convergent thinking. Bentley (1966) further stress the importance of creativity in education specifically the creative use of knowledge which is regarded as integral part of academic achievement. Creative in knowledge sharing and dispersion should be encouraged and utilized as a new solution to evaluate information learned. Fundamentally, creativity and learning share some similarities. Learning is envisaged as form of behavior – cognitive, constructivist, situated, sociomaterial. It is plausible both creativity and learning have evolved drastically. Creativity is regards as new and meaningful changes in thoughts, products and actions (Beghetto 2016). As for learning, it refers to stable changes in behaviour and understanding (Alexander et al., 2009). In addition, both creativity and learning are viewed as products and processes (Alexander et al., 2009; Beghetto, 2016). As Guilford (1950, p. 453) highlight that creativity can be examined as he refer as “some degree of evaluative restraint.” He further assume creativity in which

it require two important elements namely originality and effectiveness. As such, we contend that creativity has significant and positive relationship with academic performance because the empirical link between creativity and academic performance is still remain ambivalent which require further empirical attention (Gajda et al., 2017).

Hypothesis 4: The relationship between social media usage and educational performance is mediated by creativity.

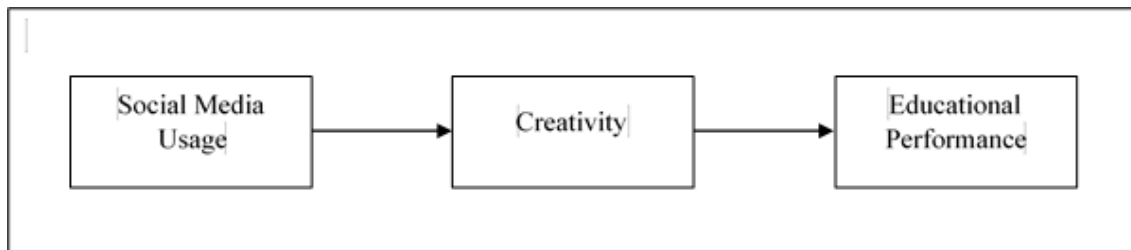


Figure 01. Research Model

2. Problem Statement

Social learning theory has been developed for traditional social network context (Bandura, 1993) and fails to gauge the extent to which socialization process in virtual social network that is established using social media could enhance an individual performance. Therefore, there is little empirical study relate social media usage with students' performance. Apart from this, little is known on how exactly creativity is related to educational performance.

Social learning theory has been developed with general notion of learning through interaction between members of traditional social networks which the socialization shapes learners' cognition, affection and behaviour, and achieve desirable learning outcome (Bandura, 1986). However, the theory has little insight of the extent to which digital socialization process in virtual social networks that are established from various social media platforms adoption in e-learning enhances university students' learning outcome. However, the notion may not necessarily reflects the similar circumstances faced by learners in digital environment who are involve in digital interaction and greatly expose to virtual social networks resulted from various social media platforms adoption in e-learning. Furthermore, little attention is given to individual capacity (e.g., creativity) when study on social media usage with regards to students' performance despite it has been proven could improve performance in past researches (Chamorro-Premuzic, 2006; Naderi et al., 2009). It is believed that individual capacity is a potential factor to bridge the relationship to enable social media usage to be conducive to positive learning outcome. Further attempt to investigate on social media usage with regards to creativity and educational performance is needed to confirm their relationships.

3. Research Questions

Current study attempted to show how social media usage is related to educational performance, creativity and educational performance of university students:

- i. Is there a positive relationship between social media usage and creativity?
- ii. Is there a positive relationship between creativity and educational performance?
- iii. Is social media usage positively related to educational performance?
- iv. Does creativity mediate the relationship between social media usage and educational performance?

4. Purpose of the Study

- i. To examine the relationship between social media usage and creativity.
- ii. To examine the relationship between creativity and educational performance.
- iii. To examine the relationship between social media usage and educational performance.
- iv. To examine the mediating effect of creativity between social media usage and educational performance.

5. Research Methods

5.1. Sample and Procedure

The participants of current study were undergraduate students enrolled in one of the top private university in Malaysia. A quantitative data collection method was adopted which known as self-report survey method. The students were recruited based on quota sampling technique whereby the representative students were selected based on each specific sub-group: art stream and science stream. Therefore, the sample of this study is able to represent the entire population. A total of 160 students were approached and participated in the self-report survey. The sample consists of 78 female students and 82 male students. Majority of respondents were aged between 19 years old and 23 years old (n=150, 93.7%). There were equal sample representation from art stream (n=79, 49.9%) and science stream (n=81, 50.1%). In term of year of study, it was consisted of 61 year one students, 42 year two students and 57 year three students. All students used at least one online social networking such as Facebook, YouTube, WBLE, WhatsApp, Wechat, LINE, QQ, Instagram, Twitter, Skype, LinkedIn and Kakaotalk. Most of students spend at least one hour per day (n=151, 94.4%) using more than one applications (n=152, 94.9%) of the online social networking for the studies.

5.2. Measures

A paper-based survey questionnaire was designed and used for fieldwork. Seven-point likert scale were used to measure all items (1 representing strongly disagree to 7 representing strongly agree). Social media usage. Items were extracted from the original three-item scale developed by Hughes et al. (2012). The adopted items were used to examine the students' informational social media usage in their study. For instance, the sample item is "I use online social networking to find and spread information".

Creativity. A total of six items was adopted and originally constructed by Madjar et al. (2011). These items were used to measure creativity which to examine students' creativity towards their work, learning and research. The sample item is "I use previously existing ideas or research in an appropriate new manner".

Educational performance. A total of 33-item scale was adopted from Kang et al. (2010). Out of 33 items, 13 items were used to measure four dimensions of cognitive domain, 10 items for four dimensions of affective domain and 10 items for four dimensions of sociocultural domain. These twelve dimensions were used to assess the student's internal competencies as well as external competencies.

6. Findings

A two stage analytical approach was used to conduct structural equation modeling – path modelling by using Smart PLS software version 3.2.8. The assessment of measurement model and structural model were presented in the following section.

6.1. Evaluation of Measurement Model

A total of 90% indicators' loadings were greater than 0.700 threshold value (Hair et al., 2017). Whereas, the indicator loadings for one item from knowledge construction, one item from social participation and two items from self-accountability were scored within the range of 0.600 and 0.700. This item was remained as the average variance extracted (AVE) for knowledge construction, social participation and self-accountability were exceeded the minimum cutoff value of 0.500 (Henseler et al., 2016). The AVE score for higher order constructs and lower order constructs were ranged from 0.621 for creativity to 0.712 for educational performance which were higher than 0.500 threshold value. For composite reliability, the values for each construct were ranged between 0.786 and 0.907. Hence, this was indicated that the measurement items of each construct possess adequate internal consistency reliability. In view of above criterion testing, the measurement model was ascertained.

For discriminant validity, at first, the cross loading was assessed where the result indicated that the items' loadings score for each construct was higher than the cross loadings of other constructs by at least 0.10. Likewise to Fornell and Larcker criterion, the square root of AVE score of each construct was larger than other correlation values in the same row and column (Fornell & Larcker, 1981). Lastly, the HTMT test result revealed that the value for each construct was not more than 0.85 (HTMT0.85) and none of the confidence interval of any construct overlapping the value of 1.00 specified by Henseler et al. (2015).

6.2. Evaluation of Structural Model

Table 1 indicates the result of direct paths. The results reveals that social media usage is significant positively related to creativity ($\beta=0.237$, $t=3.009$, $p < 0.001$) and educational performance ($\beta=0.215$, $t=3.147$, $p < 0.001$). Apart from this, creativity is also found to be significant positively related to educational performance ($\beta=0.580$, $t=7.994$, $p < 0.001$). These resulted that hypothesis one to three are supported. The mediating hypothesis is also supported where creativity is able to mediate the positive relationship between social media usage and educational performance as the beta of mediating path beta (0.389) greater than direct path beta of 0.215 (see Table 2). By looking at the effect size, it is shows that creativity has stronger effect on educational performance than social media usage. For the coefficient of determination for endogenous constructs, social media usage alone able to explain only 5.6 percent of the variances of creativity, whereas social media usage and creativity are able to explain at least 44 percent of the variances of educational performance. This also posits that the coefficient of determination for creativity

is considered weak (0.02 to 0.129) and educational performance is consider substantial as greater than the threshold value of 0.26 (Cohen, 1988). The predictive relevance for creativity and cognitive-based educational performance are considered weak as the achieved score fall in between 0.02 and 0.149 (Hair et al., 2014).

Table 01. Direct Effect Results

H	Path	Beta	Standard Error	t-Statistics	p-Value	Results	f ²	R ²	Q ²
H1	SMU -> CR	0.249	0.076	3.250	0.001	Supported	N/A	0.062	0.028
H2	SMU -> EP	0.237	0.079	2.990	0.001	Supported	0.076	0.300	0.079
H3	CR -> EP	0.447	0.099	4.504	0.000	Supported	0.271		

Note: SMC = Social Media Usage, CR = Creativity, EP = Educational Performance

Table 02. Mediating Effect Result

Relationship	Direct Effect	Indirect Effect	Total Effect	Indirect Effect / Total Effect
SMU -> CR -> EP	0.215	0.137	0.342	0.389

Note: SMC = Social Media Usage, CR = Creativity, EP = Educational Performance

7. Conclusion

Based on the statistical result, this study lends support to the positive relationship between social media usage and creativity which is consistent to the prior studies (Cao & Ali, 2018; Hu et al., 2017). The finding reflects that the benefit of using social media is not only reaped by those who work in team in the sense of team creativity enhancement at workplace (Cao & Ali, 2018) but also could enhance individual creativity among university students in their individual learning process. Moreover, the creativity enhancement is more generalized compared with the creativity that is driven by cultural perspective in Hu et al. (2017)'s study.

Apart from this, our result also supports the hypothesized relationship between social media usage and educational performance among the undergraduate students in private university. This indicates that social media has a supporting role in students learning which are consistent with the recent finding of Gregory et al. (2014) by revealing that benefits of using social media applications such as Twitter or Facebook in learning. Social media creates a virtual environment that interacts with individual learning in physical world. Students are able to access extensive information on specific scope of their study through social media which enable them to transform the obtained information into knowledge for their learning.

Consistent with the findings of Naderi et al. (2009) and Chamorro-Premuzic (2006), this study found creativity as a predictor of student's educational performance. The significant and positive relationship between creativity and educational performance among university students indicated that creativity is not only influencing academic performance among kids (Hansenne & Legrand, 2012) and adolescent group (Trivedi & Bhargava, 2010) but also an important mechanism for university students to enhance their performance in the university. Student with greater creativity is able to generate better ideas for their assignments or research projects that need original idea generations and problem solving skills intensively.

Most interestingly, social media usage is indirectly related to educational performance through creativity which implies that creativity is an important mechanism to bridge the relationship. Creativity has compelling influence as it allows individual to achieve much greater educational performance than without account for creativity when adopting social media in learning. In other words, to yield more favourable performance, creativity should be existed. Social media platforms could trigger greater creativity, a new range of individual capacity to reach desired learning outcomes. Actively use social media as platform for learning comes along with creativity enables students to have promising learning outcome. In order to achieve favourable learning outcome, the process of cultivating creativity and transformation of creativity from virtual social network are important concerns in teaching and learning. Elements or inputs to cultivate creativity should be incorporated in social media.

It is imperative to be aware on how social media technologies will influence the students' education performance through the anticipation usage of social media in university. The current study successfully enhances the understanding of the influence of social media toward education performance. This study reveals compelling evidence on the mediating effect of creativity in the relationship between social media usage and education performance.

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