



EMERGING PERSPECTIVES AND TRENDS IN INNOVATIVE TECHNOLOGY FOR QUALITY EDUCATION 4.0

Edited by

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Book

Emerging Perspectives and Trends in Innovative Technology for Quality Education 4.0

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ABSTRACT

Industrial Revolution 4.0 has dramatically changed the business and social landscape, including human behavior not only in advanced countries but also in emerging countries. Technology development affects many aspects in our society, including education. Distance learning, big data and analytics, artificial intelligent and many digital innovations have been released to improve better quality education in our society. These proceedings provide selected papers/research about innovative digital technology in education and pedagogy in Industrial revolution 4.0 covering issues like: pedagogy, education management, early childhood education, research in education, training and vocational education and social science education, earth science education and art/linguistic education related to digital innovation.

This book provides details beyond what is possible to be included in an oral presentation and constitute a concise but timely medium for the dissemination of recent research results. It will be invaluable to professionals and academics in the field of education and pedagogy to get an understanding of recent research.

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ABSTRACT

This study aims to determine the behavior of the millennials in using the Internet for learning. The study was conducted by performing a survey of the millennials in Jakarta, Bandung, Yogyakarta, Denpasar, and Banda Aceh. As a result, the general behavior of the millennials in the use of the Internet for learning was relatively good, even though those who have ever used the Internet for learning was less than half. Based on the next-generation data regarding the millennials' internet use, it was found that the intensity of the internet use is in the moderate category; they mostly access the Internet to do the assignments given by teachers; most of the access is at school; they access the Internet to learn as ordered by their teachers; most of the materials are interactive multimedia; and nearly all of the students who never use the internet for learning spend no more than two hours a day; the rest use of internet is for other purposes. Based on the correlation test, it was revealed that the students' intensity in using the Internet to learn was significantly and positively associated with students' attitudes towards the internet, the intensity of the tasks or lessons given by the teachers, their search for interactive materials, and the encouragement from their teachers. To improve these variables, the teachers' encouragement to use the Internet for the learning needs to be improved, particularly in classroom assignments, materials enrichment, and finding learning resources.

Keywords: Behavior, generation, millennials, internet, learning.

Background

The development of information and communication technology (ICT) has changed the human civilization. Currently, changes occur rapidly and the competition is intense. In these circumstances, the pace of innovation and creativity are the advantages. Speed and innovation is one of the characteristics of the millennial generation. According to Ali H.

(2019), millennials refer to generation aged 15-39 years. Meanwhile, William Strauss and Neil (2000) stated that millennials are those who were born in 1982 and above (in Brownstein, Andrew, 2000). The millennial generation is also known as generation Y. However, different idea was conveyed by Putra (2016), his study on the theory of generational differences provides a breakdown of generation based on their behavior in consuming media (one of which is the millennial generation). The research results of Alvara Research Center (2019) found that a greater emphasis is on the aspect of behaviour. He stated that the millennial generation is a creative generation who is thinking out of the box and rich in ideas and concepts. Furthermore, they are able to communicate and connect good ideas. Besides, the millennials are individuals who are good at socializing, especially in the communities that they are involved in, active in social media and the internet. They are people who are confident and dare to express opinions on the online media and in front of the public.

When viewed by age and behavior, the millennial generation is the generation that actively use the Internet and social media. Research concerning the use of the Internet for learning by Sherlyanita & Rakhmawati (2016) found a positive impact on the use of the internet. Millennials in junior high school were able to determine the use of the Internet, both for the means of learning and entertainment such as accessing social media. They knew how to divide their time well to have a direct interaction in daily life and to have interaction on social media. Furthermore, they were aware of basic security, such as privacy restriction and data sharing only to people they know. Various findings above demonstrate that millennials are young generations aged between 13-39 years who actively utilize social media and the internet; those who are confident and creative, think out of the box; and learn through social media and the Internet. In such condition, it is good to understand thoroughly the millennials' behavior in learning via the Internet. Several factors may encourage and influence their learning via the Internet. The research on millennials and internet use in adolescents has grown in number and impacts. However, the study on the millennials' behavior aged 13-18 years on the use of the internet for learning is limited. This is the unique nature of this research which is to investigate the behavior of millennials in learning through the internet and factors which encourage and influence their learning via the internet.

Research Methods

This study employed a survey of millennials in five cities: Jakarta, Bandung, Yogyakarta, Denpasar and Banda Aceh. The population of this research is the millennials aged 13 to 18 years. Stratified purposive sampling was used by utilizing random sampling of 535 respondents.

Data collection was conducted in September 2018. Data were analyzed using descriptive statistics and Spearman correlation statistics. To facilitate processing of the data, SPSS version 24 was employed. The data analysis was expected to answer the research questions.

Results and Discussion

The millennials' behavior of the use of the internet for learning purpose is measured by how frequent they use the internet. Data of respondents in this study were collected from 535 respondents (Table 1). It was found that only few millennials have never used the Internet for learning (6.5%); nearly half stated that they rarely use the Internet for learning (47.1%); approximately a quarter of them posited that they sometimes use the internet for learning (28.6%); and the rest always use the internet for the learning purpose (21.3%).

Furthermore, the results were developed via interviews with the millennials. Based on the data on the frequent use of the internet for learning, it was revealed that 6.5% of the millennials did not use the internet for learning because of financial constraint, like they do not have an internet data on their mobile phone or wifi at home. Furthermore, the number of those who sometimes use the internet to learn was 47.1% depending on whether or not their assignments need internet's access. Next, the millennials who frequently access the internet for learning accounted for 28.6% because their teachers often give them homework or extra materials over the internet. In such circumstance, the millennials inevitably need to acquire the internet access. Finally, the millennials who invariably have internet access reached 21.3%.

Based on the reasons on the internet use for learning purpose, it was revealed that most of the millennials (46.2%) use the internet to do assignments, while 5% of them to seek a referral. Also, 19.8% was found to use the internet for exploring their school's material, while 29% to find information. The data above indicate that, in general, the millennials utilize the internet because of the tasks given by their teachers, and only few of them use it to find references or to deepen their subjects. This study found that the use of internet by the millennials needs to be guided and directed towards productivity.

In addition, it was revealed that the Internet use is largely done at school (43.3%). The millennials usually access the internet at school to complete their assignments from their teachers or to find information during their spare time. However, some schools also ban the use of smartphone by students. Additionally, the internet usage at the home is also significant (37.9%) but lower than at school because the internet access at home is limited. The millennials who access the internet in other places, such as libraries, Internet cafes, and public facilities are noticeably small.

The majority of the millennials utilizing the internet because of their teachers' request for 65.9%. This depicts that this generation's behavior is greatly influenced by who is the referral. Additionally, parents's request obtained 16.4%. In this regard, in-depth interviews were performed to investigate whether the use of internet for learning was greatly influenced by teachers because they give homework and assignments which allow students to conduct their own learning via the internet. On the other hand, the parents' request was due to the learning environment at home, especially where one of the parents is college graduate or where wifi is available. The rests were influenced by friends, own willpower, and idle time.

According to the result of the use of learning media on the Internet, it was found that over 45.1% of the millennials prefer interactive multimedia; 5.0% of them like using audio; 35.5% preferably choose video; 12.1% prefer text or books; and the reminder (2.3%) like to learn

from augmented reality. From the data above, most of the millennials highly preferred to use interactive multimedia, such as games, simulations, animations, and video for learning.

Based on the result of learning styles, it was depicted that the majority of the millennials (46.2%) prefer games or interactive games, while only 7.1% of them choose audio. Those who prefer watching video are accounted for 34.6% and the rest (12.1%) prefer reading. The data indicated that most of the millennials preferred playing interactive games and only few of them liked to listen to audio.

Millennials' interest is a crucial factor to improve learning achievement. This notion is explained in the studies conducted by Maghfiroh (2016) and Ariastuti, et al (2014). Hence, the low internet proficiency among students is caused by the low interest of the students towards the lessons conducted via internet.

The majority (40.6%) of the millennials access the internet for learning for the duration of half to 1 hour. Furthermore, 34.6% of them spend 1 to 2 hours, 20.5% access the internet for study for less than ½ hour, and 4.3% spend more than 2 hours. This result indicate that a maximum of duration for accessing the internet for learning is only two hours while a few spend over two hours for the same purpose. After interviews, the result showed that, in fact, the millennials generally access the internet for more than two hours for the purpose of study briefly, while the rests are for entertainment, searching information, and accessing social media like instagram, facebook, twitter, and youtube.

According to the national survey report by CSIS (2017), each online media found striking difference between the millennial and non-millennial generations. Approximately 54.3% of the millennials admitted to read online media daily, while merely 11.9% of the non-millennials perform the same activity.

Based on the results from correlation test, factors related to the intensity of the internet use for learning showed that the correlation was 0.261 with a significance value of 0.000. This indicates that the ability of students to access the internet for learning relates positively and significantly with their interest in learning with the internet at the 99% confidence level. It means that the more frequent the students access the internet, the higher their interest. Conversely, the less frequent they access the internet for learning, the less their interest in accessing the internet.

In general, the millennials sometimes use the internet for learning (47.1%). According to table 2, generally, the millennials use the internet only for work assignments (46.2%), tasks given by the teachers (65.9%), and assignments at school (43.3). The most preferred content according to the millennials is interactive multimedia.

Conclusion

The frequency of the millennials' use of the internet for learning is still low. Their internet utilization to learn is mostly to complete their assignments. The millennials prefer to find materials on the internet because of interactive multimedia and variety of learning styles in the form of interactive games. These results suggest that the millennials prefer to learn from interactive, challenging, and instant materials which can be easily found on the internet.

The frequency of the millennials in accessing the internet for learning is still small. Therefore, to increase their interest in learning through the internet, it is advisable for them to frequently access the internet for learning. Learning via the internet can be conducted in various ways, such as elearning, blended learning, Masive Open Online Course (MOOC), online distance learning, searching for learning resources, references, and latest journals, and deepening their subjects. Hence, the internet can be used in interactive and communicative way to improve the millenials' competence, updating and increasing their current knowledge.

To raise the students' interest in learning through the internet, there are numerous assignments for the teachers. Material developed and uploaded to the internet should be short, concise, and interactive. In addition, the given assignments should be in the form of group projects which can challenge students to explore the internet.

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