

Investigating the Use of Information and Communication Technology (ICT) among University Students to Improve Their Academic Achievement

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Abstract. This study aims to investigate the use ICT among higher education students at a state university in Batusangkar. Mixed methods were used to find out the ways the students take advantage of ICT to improve their academic achievement. Data of the research were collected through a google-form consisting closed- and open-ended questions. Two types of data were collected using the google-form. : quantitative data and qualitative data, were analyzed with descriptive statistics and with the technique of data analysis proposed by Miles, Huberman, and Saldana (2014). The research results showed that the students use different ways to improve their academic achievements which will be elaborated in the next part.

Keywords: ICT; higher education students' improvement; academic achievement

1 Introduction

ICT has been developed for educational purposes [1] which can be used effectively to support teaching and learning such as helping students to do assignments given by teachers, enabling them, helping to lower social gaps in teamwork, and realizing their responsibilities when using it to manage their work [2]. It possesses crucial effect on students' learning [3]. Results of a study showed that those were taught through had better performance in CRS [4], and ICT can be used to train and teach to a big number of people efficiently [5].

ICT growth and improvement has made it used widely in educational sector [6]. It could be said that the rapid development of this technology ideally has to be considered a lot of pupils as a useful aid by students to enhance their academic achievement. Unfortunately, a lot of pupils nowadays are still lack of consciousness on the benefits of ICT to improve their academic achievement. Most lecturers at IAIN Batusangkar, for example, were disappointed to students' attitude, truant among students to avoid schoolwork, the quality of the task they submit, and some other possible problems that contribute to their low academic achievement. It is crucial for educators at schools or universities to encourage the pupils to take advantage of ICT as a tool to improve the students' academic achievement [6]. ICT is proved to make teaching learning process more effective and more efficient [7].

There are several types of ICT like Electronic Mail, Facsimile, Video conferencing, and Telephone conferencing [8], Digital Networks, Packet Switch Network, Personal Digital Assistant, and E-learning [9]. Using ICT in language classroom has been proven to be beneficial

in solving problems in language teaching, like memory problem, vocabulary work problems, motivating language learners [10]. There are also four other uses of ICT to facilitate language teaching in the regular lessons, to be a resource in a research resource, to do projects, and to be used in real communication [10].

It is widely believed that ICTs offer many advantages to help educators and pupils in the process of education so that better result (higher academic achievement) is achieved since it been the concerns of scholars, parents, policy makers and planners [11]. The new ICTs has given both the teachers and the students to access online information faster and better [5].

2 Method

The method used was mixed method in which they collaborated quantitative and qualitative approach. The descriptive research is done to drill some information about preferences, attitude, practices, or interest to society. While, a qualitative study is beneficial to understand particular, localized occurrences or contexts based on the participant group's perspective toward events, beliefs, or practices [12]. This research had been done to English Teaching Department students of IAIN Batusangkar at any level. In this research, they described the use of ICT among higher education students in improving their academic achievement.

2.1 Research Respondents and Informants

The respondents of this study were the English learners registered in 2020/2021 academic year. They stand at different level of studies. While the informants of this research were chosen based on the result of the questionnaire fulfilled by the 114 research respondents. Based on the data collected from the questionnaire, research informants were determined because they know the background of the research [12] and [13]. The criteria used to choose the informants: (1) honesty, (2) reliability, (3) openness, (4) neutrality, and (5) knowledgability about the case being researched[13]. There were also some specific criteria in selecting the research informants. They were: 1) those who had fulfilled the research questionnaire, 2) students who used ICT (social media) in improving their academic achievement, 3) students were not consistently giving argument, and 4) those who did not give complete information. They were selected by applying purposive sampling technique since the informants are supposed to know more about what the researchers want to know is [14]. The informants were chosen to be interviewed because they gave unclear information. There were 3 informants who had been interviewed. The interview was stopped because no kore new information got. In other words, the 3 informants did not get any different or additional information from them. This means that the data had been saturated.

2.2 Research Instruments

The researchers gave a questionnaire to the research respondents to get the quantitative data. The questionnaire was created by using Bahasa in order to help the respondents understand and answer all stated questions. It consisted of 84 questions in order to get some important information about the use of ICT among English Teaching Department students in improving their academic achievement. Then, they interviewed them based on the result of the

questionnaire. In this research, they interviewed those informants who were fulfilled the criteria mentioned previously.

2.3 Checking the Data Trustworthiness

To validate the data of the study, triangulation technique was used, i.e., by comparing the data collected from the questionnaire with those got from the interview [14]. In this research, the researchers compared the questionnaire result with the interview result to check the data trustworthiness.

2.4 Technique of Data Analysis

For quantitative data, the researchers analyzed the result of the questionnaire by using descriptive analysis. used google form to distribute the questionnaire to the research respondents. After these respondents fulfilled it, it was automatically showing the result. This means that they were easy to know who were potentially to be the research informants. Therefore, it was easy for them to do the next analysis. While the qualitative data was analyzed by following the three kinds of activity suggested by experts [15]. In the data reduction, they did several steps. First, they recorded the interview result and made the transcriptions of interview result. Second, they gave code the informants such as I-1 means informant 1, I-2 means informant 2, and so forth. Third, they also gave code the transcriptions for each item related to ICT use to improve their academic achievement. Then, they bolded and gave code (numbers or letters) for specific information that are needed. In the data display, they displayed the data by using a table that consisted of information about the use of ICT among students in improving their academic achievement.

3 Result And Discussion

3.1 A Quatitative Data

The researchers had created the design of the research questionnaire to get quantitative and qualitative data. To validate the instrument, they met with the research instrument validator. They revise the instrument to get better result. The open questionnaire had been given to the research respondents to get information. Even though the Covid 19 had attacked all over the world including Indonesia that make them difficult to get the information from the research respondents, they successfully distributed the questionnaire on late of August 2020 via on-line by using Google Form. Of course, it took long time to wait them to give information relating with this research.

To get detail information about the research questions, the researchers gave questionnaire to the research respondent. Based on the analysis, it was found that: 1) they had used many kinds of social media such as Bookmarking, Wiki, Creating Opinion, WhatsApp, Facebook, Instagram, E-mail, Twitter, Zoom Cloud Meeting, Telegram, Google Meet, Line, YouTube, Wattpad, Messenger, Systec, Telkomsel, Snapchat, Google Classroom, BBM, Discord, Umma, Tok-tok, Instagram, and Google, 2) female respondents dominantly used ICT in improving their academic achievement than male respondents, 3) both male and female respondents had their own reasons in using ICT in order to improve their academic achievement, 4) the research

respondents had different amount of time in using ICT in their daily life, 5) the research respondents said that they got positive effects from using ICT, both non-academically and academically, and 6) the respondents also said that they got negative effects from using ICT, both non-academically and academically.

3.2 A Qualitative Data

After collecting the data, the researcher analyzed them by referring to the theory from Miles & Huberman. It was found that the informants had used same and different social media (ICT) in improving their academic achievement at IAIN Batusangkar. Here, the researchers can conclude that there are 10 ICT that had been used. They are as Wiki, WhatsApp, Facebook, Instagram, Email, Twitter, Zoom Cloud Meeting, Messenger, Flickr, Google Meet, and Google Classroom. It is also known that the students had some academic and non-academic reasons of using them. There are twenty-seven academic reasons why they used ICT. They are making task and learning sources, having complete information, making easily to find information and convey materials by the lecturers, sharing learning material and Getting practice with friend in order to meet another meeting, for learning material and new knowledge, being easy to get information from lecturers, making discussion, having no face-to-face directly during pandemic, following English group, can learn English sentences, as a medium to look for group discussion, having related with the knowledge of English because it has short videos on understanding English that contains verb and thing that help him understanding English or having English learning account that contains English learning video, facilitating learning access or being a medium to login to other application, sending task or sending task to the lecturer and as a medium to other apps, getting information about learning, improving knowledge of English, having English learning account that contains English, making learning easier because learning materials were shared, can listen directly by the lecturers, making group discussion to discuss material given by the lecturers, being easy to understand material by the lecturers, making English group discussion, getting vocabulary improvement after doing communication with someone else, no specific reason, being easy to understand material by the lecturers, having group discussion, and sending tasks. There are also found that there are three non-academic reasons: being easy to make blog, following friend, and looking for old friend.

3.3 Discussion

There are some benefits of using ICTs namely: improving EFL learners' skills, making it easier for them to access it whenever and wherever, increasing their vocabulary mastery. They can also facilitate training in the EFL learning [16]. The results of the study showed that female students preferred to use social networking rather than male students. It is different from Mazman and Usluel's [17]. Then, the students might also get negative effect of ICTs when being used carelessly since they can influence negatively to one's mental and physical health [18].

4 Conclusion

The results of research showed that: 1) the students preferred using different kinds of ICT, 2) that both male and female students preferred different social media platforms for different

personal reasons, 3) the students had twenty-seven academic reasons in using ICT such as making task and learning sources, having complete information, making easily to find information and convey materials by the lecturers, 4) female students (female respondents) spent much time in using ICT in improving their academic achievement rather than male students (male respondents), 5) they also got some positive effects from using ICT both academically and non-academically, and 6) There were also some negative effects gotten by the students from using ICT.

5 Acknowledgements

Thanks to the research institutes and community service of IAIN Batusangkar who have funded this research.

References

- [1] Amin, Syed Noor Ul. An Effective use of ICT for Education and Learning by Drawing on Worldwide Knowledge, Research, and Experience: ICT as a Change Agent for Education. Available in <https://www.nyu.edu/classes/keefe/waoe/amins.pdf>, (2017)
- [2] Harrison, David and Leonard Wamakote. Teacher Factors Influencing Classroom Use of ICT in Sub-Saharan Africa. Itupale Online Journal of African Studies. ISSN 2043-6165, Vol. 2 p. 39- 54, (2010)
- [3] Khan, Muhammad Saqib et. al. The impacts of ICT on the students' Performance: A Review of Access to Information. Research on Humanities and Social Sciences. ISSN (Paper) 2224-5766 ISSN (Online) and 2225-0484 (Online) Vol.5, No.1, 2015. Available on www.iiste.org.
- [4] Ikwuka, O. I. and Henry, Adigwe Joseph Eluemunor Henry. Effect of ICT on Secondary School Students' Academic Performance in Christian Religious Studies in Oshimili North Local Government Area. IJISSET - International Journal of Innovative Science, Engineering & Technology, Vol. 4 Issue 5, May 2017 ISSN (Online) 2348 – 7968 | Impact Factor (2016) – 5.264. Available on [IJISSET_V4_I05_57.pdf](http://www.ijisettech.com/ijisettech/V4_I05_57.pdf). (2017)
- [5] Alderete, María Verónica and María Marta Formichella. The Effect of ICTS on Academic Achievement: the Conectar Igualdad Programme in Argentina. Available in [RVII119_Formichella.pdf](http://www.rvii119.com/Formichella.pdf), (2016)
- [6] Yunus, M MD et. al. Language Learning via ICT: Uses, Challenges and Issues. Retrieved on December 10, 2018 from WSEAS TRANSACTION on INFORMATION SCIENCE and APPLICATION Journal. (2009)
- [7] Neil and Selwyn. ICT in Non-Formal Youth and Adult Education: Defining Territory. OECD/NCAL International roundtable, Philadelphia. Retrieved December 10, 2018 from http://www.literacy.org/ICTconf/OECD_Selwyn_final.pdf. (2003)
- [8] Bumpres, Bianca. Types of ICT Communication. Available on http://www.ehow.com/info_8157562_types-ict-communication.html. Retrieved on January 6, 2013, (2013)
- [9] Dephoff, Jacklyn. The Use of Information Communication Technology. Available on http://www.ehow.com/info_the-use-ict-communication.html. (2012)

- [10] Koptyug, Nina M. Novosibirsk. ICT, Vocabulary and Motivation. <http://www.teachingenglish.org.uk/articles/ict-vocabulary-motivation>. Retrieved on November 26, 2018. (2013)
- [11] MeenuDev. Factors Affecting the Academic Achievement: A Study of Elementary School Students of NCR Delhi, India. Journal of Education and Practice. www.iiste.org ISSN 2222-1735 (Paper) ISSN 2222-288X (Online), Vol.7, No.4, 2016. Available on <https://pdfs.semanticscholar.org/aa77/a2a72395078f3c851c31538a9e76a49a7941.pdf>, (2016)
- [12] Gay, L.R. and Peter Airasian. Educational Research: Competency for Analysis and Application (Sixth Edition). New Jersey: Merrill Publishing Company, (2000)
- [13] Moleong. Metodology Penelitian Kualitatif. Bandung: PT. Remaja Rosdakarya, (2006)
- [14] Sugiyono. Metode Penelitian Kuantitatif, Kualitatif, dan R & D. Bandung: Penerbit Alfabeta, (2000)
- [15] Miles, Mathew. B dan Huberman, A. Michael. Qualitative Data Analysis. Los Angeles: Sage Publications, Inc, (1994)
- [16] Malik, Agung Rinaldy and Asnur, Muhammad Nur Ashar. Using Social Media as A Learning Media of Foreign Language Students in Higher Education. BAHTERA: Jurnal Pendidikan Bahasa dan Sastra, Vol. 18 No. 2, Juli 2019. Retrieved on July 23rd, 2021 from <http://journal.unj.ac.id/unj/index.php/bahtera/>, (2019)
- [17] Ali, Sana et al. Gender Discrepancies Concerning Social Media Usage and its Influences on Students Academic Performance. Utopía y Praxis Latinoamericana, vol. 26, no. Esp.1, 2021. Retrieved on July 23rd, 2021 from [_](#), (2021)
- [18] Singh, ajay. Positive and Negative Effect of Social Media on Eduaction. The Asian School. Retrieved on July 23rd, 2021 from <https://www.theasianschool.net/blog/positive-negative-effect-of-social-media-on-education/>, (2021)