Digital Literacy Profile of Students: Basis for Integration of Information and Communication Technology in Instructional Adjustment Plan

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Abstract: **The purpose of this study was to determine the level of digital skills of students. This study also aimed to determine what instructional adjustment plan will be proposed based on the results of the study. This study utilized a non-experimental quantitative research design utilizing descriptive technique. Research instruments on digital skills of the students was used as sources of data. Utilizing mean, this study found out that the level of digital skills of students in terms of information and data literacy is high, the level of digital skills of students in terms of communication and collaboration is high, the level of digital skills of students in terms of digital content creation is moderate, the level of digital skills of students in terms of safety is moderate, the level of digital skills of students in terms problem-solving high, and the overall level of digital skills of learners is high.**

Keywords: **digital skills of students, education, non-experimental quantitative research, descriptive-correlational technique, Philippines.**

I. INTRODUCTION

Digital skill means that one can understand and utilize technology in an increasingly interconnected world. Students need to realize how their digital interactions can have a lasting impact on their personal and professional lives. Collaborative learning technology can enhance problem-solving and communication skills and foster creativity, complementing the goals of education on the whole discussing as groups through group messaging apps (Claro, Salinas, Cabello-Hutt, San Martín, Preiss, Valenzuela & Jara, 2018); Schmid & Petko, 2019).

Digitally literate students are confident using digital content and tools in their learning. Digital literacy skills enable them to find and access digital content that is fit for purpose and analyze and combine information to develop their own understandings. Digital learning makes students smarter. Learning tools and technology enable students to develop effective self-directed learning skills. They also promote cooperation and teamwork which are very important skills, in every aspect of life (Siddiq, Scherer & Tondeur, 2016).

However, not all learners can demonstrate a digital skill level which is expected to their level. Australian teenagers are increasingly struggling to achieve the basic level required in information and communications technology. In 2014, only around half of students in Year 10 achieved the minimum standard of digital competence. Examples of where students struggled include: searching for relevant resources on the internet; using a web browser history; creating tables and charts; sorting data in a spreadsheet; displaying hidden toolbars; inserting images; changing font formats and colours; and using animations and page transitions effectively (Gallardo-Echenique, Marqués-Molías, Bullen & Strijbos, 2015).

The problem on poor digital skills among the students has captured the interest of the researcher especially that there has been no research conducted on the similar topic in the local context. The researcher wanted to get the level of the students' poor digital to help them. It is in this consideration that this research is made to contribute to the body of knowledge on the topic.

II. BODY OF ARTICLE

This study utilized the non-experimental quantitative research design utilizing descriptive technique. This study employed the descriptive method to determine the digital skills of the learners. Descriptive method research is a measure of variable with varying level of measurement. According to Johnson (2012) this research is appropriate when researcher would like to establish the relationship between two variables. In this study, the digital skills of the learners is described.

RESULTS:

Level of Digital Literacy Profile of Students in terms of Information and Data Literacy

The level of Digital Literacy of Students in terms of Information and Data Literacy with an overall mean of 3.78 with a descriptive equivalent of high indicating that all enumerated indicators were oftentimes observed. The overall mean was the result obtained from the mean of the indicators for the specific items from the questionnaire intended for this particular indicator which was appended in this study.   The descriptors of the questionnaire are as follows: adapt my searches based on knowledge about how search engines produce results, use search engines to find a given type of information, e.g. images, videos or maps determine whether a news story being disseminated online is false, store and organize digital content in a way so I can later find it, and choose a safe and lasting storage place for digital content.

The high level of Digital Literacy of Students in terms of Information and Data Literacy is due to the high level of rating given by the respondents to the indicators adapt my searches based on knowledge about how search engines produce results, use search engines to find a given type of information, like images, videos or maps, and determine whether a news story being disseminated online is false.

The above practice of students are expected to increase their Digital Literacy of Students in terms of Information and Data Literacy as they are congruent with the views of various authors who pronounced that students need to manifest a good sense of information and digital literacy to be fully functional and get advantage of the use of technology in the classroom and in the future word of work.

Level of Digital Literacy Profile of Students in terms of Communication and Collaboration

The level of Digital Literacy of Students in terms of Communication and Collaboration with an overall mean of 3.52 with a descriptive equivalent of high indicating that all enumerated indicators were oftentimes observed. The overall mean was the result obtained from the mean of the indicators for the specific items from the questionnaire intended for this particular indicator which was appended in this study.   The descriptors of the questionnaire are as follows: communicate with someone online without exposing my identity, correctly cite the creator when using or disseminating other people's material, find a relevant online meeting place for a specific area of interest, arrange an online meeting as a replacement for a physical meeting, and manage and delete my digital traces.

The high level of Digital Literacy of Students in terms of Communication and Collaboration is due to the high level of rating given by the respondents to the indicators find a relevant online meeting place for a specific area of interest, arrange an online meeting as a replacement for a physical meeting, and manage and delete my digital traces.

These practices are expected to increase the level of Digital Literacy of Students in terms of Communication and Collaboration as it is aligned with the views of some authors which stated that students need to be cautious and exercise prudence in sharing information online especially those which are personal as this may lead to some data identity theft or similar fraudulent activities in the social media.

Level of Digital Literacy Profile of Students in terms of Digital Content Creation

The level of Level of Digital Literacy of Students in terms of Digital Content Creation with an overall mean of 3.81 with a descriptive equivalent of high indicating that all enumerated indicators were oftentimes observed. The overall mean was the result obtained from the mean of the indicators for the specific items from the questionnaire intended for this particular indicator which was appended in this study.

The descriptors of the questionnaire are as follows: combine tools in order to create digital content, summarize information from different sources in a representative manner, choose a suitable creative commons license for material I

ISSN 2394-9686

International Journal of Novel Research in Education and Learning
Vol. 7, Issue 4, pp: (18-21), Month: July - August 2020, Available at: www.noveltyjournals.com

have created, plan and design a solution to a problem in the form of step-by-step instructions, and identify when and how programming can be used in different subject areas.

The moderate level of Level of Digital Literacy of Students in terms of Digital Content Creation is due to the moderate level of rating given by the respondents to the indicators combine tools in order to create digital content, plan and design a solution to a problem in the form of step-by-step instructions, and identify when and how programming can be used in different subject areas.

These practices are expected to increase the level of Level of Digital Literacy of Students in terms of Digital Content Creation as it is aligned with the views of some authors which stated that students need to know how to combine tools in order to create digital content, summarize information from different sources in a representative manner, choose a suitable creative commons license for material I have created, plan and design a solution to a problem in the form of step-by-step instructions, and identify when and how programming can be used in different subject areas.

Level of Digital Literacy Profile of Students in terms of Safety

The level of Digital Skills of the Learners in terms of Safety with an overall mean of 3.22 with a descriptive equivalent of moderate indicating that all enumerated indicators were oftentimes observed. The overall mean was the result obtained from the mean of the indicators for the specific items from the questionnaire intended for this particular indicator which was appended in this study.

The descriptors of the questionnaire are as follows: protect digital equipment from undesired access online, detect when someone is trying to trick me into sharing personal information, identify web sites that can be used for fraud or other types of unwanted activity, help prevent online bullying, and estimate the impact of my use of digital equipment on the environment The moderate level of Level of Digital Skills of the Learners in terms of Safety is due to the moderate level of rating given by the respondents to the indicators: protect digital equipment from undesired access online, detect when someone is trying to trick me into sharing personal information, identify web sites that can be used for fraud or other types of unwanted activity, help prevent online bullying, and estimate the impact of my use of digital equipment on the environment.

These practices are expected to increase the level of Level of Digital Literacy of Students in terms of Safety as it is aligned with the views of some authors which stated that students need to exercise digital safety at all times in order to utilize the digital technology in the proper way and influence others to do the same.

Level of Digital Literacy Profile of Students in Terms of Problem-Solving

The level of Digital Literacy of Students of the Learners in terms of Problem-solving with an overall mean of 3.52 with a descriptive equivalent of high indicating that all enumerated indicators were oftentimes observed. The overall mean was the result obtained from the mean of the indicators for the specific items from the questionnaire intended for this particular indicator which was appended in this study.

The descriptors of the questionnaire are as follows: find solutions to technical problems by searching online, adapt and adjust the behavior and functionality of a program through its settings, construct a product with the support of digital technology, learn a new programming language on my own, and adapt my ways of working based on new digital tools.

The high level Digital Literacy of Students in terms of Problem-solving is due to the moderate level of rating given by the respondents to the indicators: find solutions to technical problems by searching online, adapt and adjust the behavior and functionality of a program through its settings, and construct a product with the support of digital technology.

These practices are expected to increase the level of Level of Digital Literacy of Students in terms of Problem-solving as it is aligned with the views of some authors which stated that students need to find solutions to technical problems by searching online and adapt and adjust the behavior and functionality of a program through its settings.

Summary of Level of Digital Literacy Profile of Students

The Summary of the Level of Digital Literacy of Students with the overall mean of 3.48 and standard deviation of 0.343 with a descriptive equivalent of high indicating that all enumerated indicators were often observed. The overall mean was

the results obtained from the mean of the indicators for the specific items from the questionnaire intended for this particular indicator which is appended in this study.

Among the enumerated indicators, Information and Data Literacy obtained the highest mean of 3.78 with a descriptive level of high. it is followed by Communication and Collaboration with a mean rating of 3.52 or high, Problem-solving with a mean score of 3.52 or high, Digital Content Creation with a mean rating of 3.35 or moderate, and Safety with mean rating of 3.24 or moderate.

The high level of Digital Literacy of Students is due to the high level of rating given by the respondents to the indicators Information and Data Literacy, Communication and Collaboration, and Problem-solving. These practices are expected to increase the level of Level of Digital Skills of High School Learners is as these are aligned with the statement that learners need digital literacy skills as a preparation of the challenges they will have in the future particularly in the workplace.

III. CONCLUSION

With considerations on the findings of the study, conclusions are drawn in this section. The level of Digital Literacy of Students in terms of information and data literacy is high, the Level of Digital Literacy of Students in terms of communication and collaboration is high, the level of Level of Digital Literacy of Students in terms of digital content creation is moderate, the level of Level of Digital Literacy of Students in terms of safety is moderate, the level of Digital Literacy of Students in terms problem-solving high, and the overall level of Digital Literacy of Students is high.

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