International Journal of Early Childhood Special Education (INT-JECS)
DOI: 10.48047/INTJECSE/V14I7.293 ISSN: 1308-5581 Vol 14, Issue 07 2022

Learner's Discernment on Eminent ICT tools and Its Impact on Higher Education

Rafath Zahra, Dr. Ananthi Sheshasaayee
P.G and Research Department of Computer Science *P.G and Research Department of Computer Science*
Quaid-E-Millath Government College for Women *Quaid-E-Millath Government College for Women*
Chennai, India
rafathzahra.research@gmail.comananthi.research@gmail.com

Abstract-This paper examines the awareness and effectiveness of important technological tools that can be integrated in daily classrooms. The rapid growth in technology has contributed to changes in the way that learning is conducted and the resources that are provided in the classroom. Consequently, it has saved both resources and cost associated with traditional learning. In addition to leveraging technology to achieve new levels of productivity, educators can adopt useful digital tools to expand learning opportunities, and increase student engagement and support. They can also implement more effective instruction methods while tailoring learning to the students' needs. This paper examines the learner's perspective on ICT tools, Its effectiveness and ease of access. To analyze the effectiveness and awareness of these tools in higher education, undergraduate and postgraduate students were given a questionnaire. This report was generated using quantitative approach as587 completed responses were analyzed using SPSS tool.

Keywords: Higher Education, ICT tools, Digital Tools, E-Learning

I. INTRODUCTION

A majority of colleges and universities have embraced new technologies in the past, sometimes before they had proven their educational value. Colleges and universities have experimented with technology as diverse as the blackboard and personal computers throughout their history. Certain technologies have become permanent features of higher education [1]. Technology allows for collaborative learning, as well as personalizing and individualizing education. Technology makes it possible for instructors to spend more time with students by reducing the need to deliver vast amounts of information [2]. The main objective of this paper is to help know learner's perspective on effectiveness and use of tools so that professors can better tailor their teaching strategies and assignments to better match the interests and needs of their students. As technology expands its ability to deliver large volumes of information over networks, it expands the potential to personalize educational programs to the individual needs of each learner [3].

This paper mainly focussed on five important technologies that is freely available to be incorporated in daily classrooms. Learners were given a questionnaire to enquire about their perspective on the application of Cloud storage, Learning Management System (LMS), Online Assessment, E-Deliverables and video conferencing. All these technologies were widely adapted during COVID -19 pandemic. These are the umbrella technological tools that incorporate various tools within them. Technological tools such as these incorporate a number of tools within them. Reduced costs and enhanced learning are two benefits of the cloud [4].

II. LITERATURE REVIEW

Cloud services and applications help Colleges provide students with constantly synchronized content, collaborate on projects simultaneously, and help teachers access lesson plans remotely. Cloud applications and services helpcolleges reduce costs and improve learning. Colleges can have learning content that is always synced, students can collaborate on projects simultaneously, and teachers can access lesson plans remotely with cloud applications and services [5].

In education, learning management systems provide instructors with information on a student's completion of courses, knowledge gaps identified, participation and engagement levels, and time taken to finish the course. The reporting function of a LMS is another advantage for educational institutions [6]. Institutes can use these reports to assess whether courses can meet the present needs of their institution and if any changes need to be made [7]. The benefits of online assessments include the ability to sit a secure and invigilated examination from the comfort of one's own home, which reduces stress and time spent traveling to a test centre. The reports on candidate progress and results can also be viewed immediately [8]. Providing useful feedback through this method helps candidates understand how well they are doing, where their strengths lie, and what areas they need to focus on [9].

As information and knowledge are vital for economic, social, cultural, and political upliftment and development in the 21st century, the use of E-content has become an important and powerful tool of instruction [10]. This new method can be used to create an information rich society where all people, are able to create, receive, share and utilize information and knowledge. Teaching has been transformed in several ways by the use of e-content [11]. When it comes to e-learning, structured and validated e-deliverables serves as a valuable virtual trainer. Teachers are able to provide their own resources today, which gives them more control over classroom management than in prior generations [12].The novel Coronavirus pandemic is forcing HEIs at all levels to shift to online-only instruction, so teachers who formerly taught in-person will now find it difficult to capture and engage students' attentions during lectures and lessons [13]. Instructors can use various technology including pre-recordings, livestreams, and software that allows interactive video conferencing [14]. This technology provides several advantages for educators. Feelings of isolation can be caused by social isolation or distance learning [15]. With video conferencing applications you can bring people together for interaction. In addition to connecting students from across the world, this tool can also engage both domestic and international participants [16].

According to Rawat and Sood (2020), higher education field (2360) has the highest number of publicationsconcerning other subcategories of formal education out of 4258 research articles. Information and communication technology courses are available at various levels of higher education (engineering, medical, certificate, training program, and other types). Due to its popularity over traditional learning methods, distance education (19.25%) witnessed the next highest growth rate [17].

III. PURPOSE OF STUDY

There are many inventions in the field of technology and the education sector always tries to adapt and check the advantages of such inventions in classrooms. Higher education has adapted various tools for better learning outcomes. The perspective of learners towards the effectiveness and ease of accessibility of these tools needs to be analyzed to confirm the usefulness of these tools. The questions were aimed to evaluate the frequency of use of ICT tools in classrooms, and also the ease of accessibility and level of inclination towards these tools. COVID-19 pandemic requiredinstitutions to change their traditional classroom into online learning environment. Many institutions adapted these technological tools in face-to-face learning system. To ensure the continuity of using these tools in classrooms, learner's perspective needs to be evaluated.

Table 1. Demographic Data

Factor	**Category**	**Percentage**
Gender	Male	59.9%
	Female	40.1%
Course	Under graduation	45.6%
	Postgraduation	54.4%

IV. METHODOLOGY

Research Design

In this study, the data obtained from all respondents were collected and analyzed using a quantitative methodology.After developing an initial questionnaire, the researchers finalized it before sending it to the targeted respondents.In addition to exposure to ICT tools in HEIs, the questionnaire also addresses research objectives relating to learner perceptions regarding the use of ICT tools in HEIs.

Instrumentation and Sampling

Respondents were asked to complete a self-developed cross-sectional survey questionnaire, consisting of six sections. As part of the survey, respondents were asked to use a four-point Likert scale.In total, 587 undergraduate and postgraduate students were selected at random for this study.They answered the questions based on how they perceived the situation.It was distributed on the internet using a form created in Google Forms. It provided information regarding personal details, Cloud Storage, Learning Management System, Online Assessment, E-Contents, and Video Conferencing.

V. DATA ANALYSIS

DOI: 10.48047/INTJECSE/V14I7.293 ISSN: 1308-5581 Vol 14, Issue 07 2022

The Descriptive Statistics was used to test the distributions within the variables/items through their frequencies and percentages.

The Reliability assessment was conducted to determine whether the collected data were internally consistent. In this study, descriptive statistics are used to analyze the demographics of respondents and frequencies are used to analyze the frequency data.Males were the majority among respondents (59.9%) while females constituted 40.1%.A total of 54.4% of respondents were postgraduates, while 45.6% were undergraduates.Using Cronbach's Alpha, our research questionnaire was shown to have high reliability and internal consistency with (0.801) this means that it has high reliability and high internal consistency. The above details are given in Table 1.

VI. RESULTS AND DISCUSSION

The data was analyzed to understand the ease of access of the various ICT tools mentioned in the database. Table 2, shows the percentage of male and female respondents.

Table 2. Percentage of Respondents who find easy to access the mentioned ICT Tools

	Male	Female
Cloud Storage	48%	52%
LMS	56%	44%
Online Assessment	48%	52%
E-Deliverables	53%	47%
Video Conferencing	49%	51%

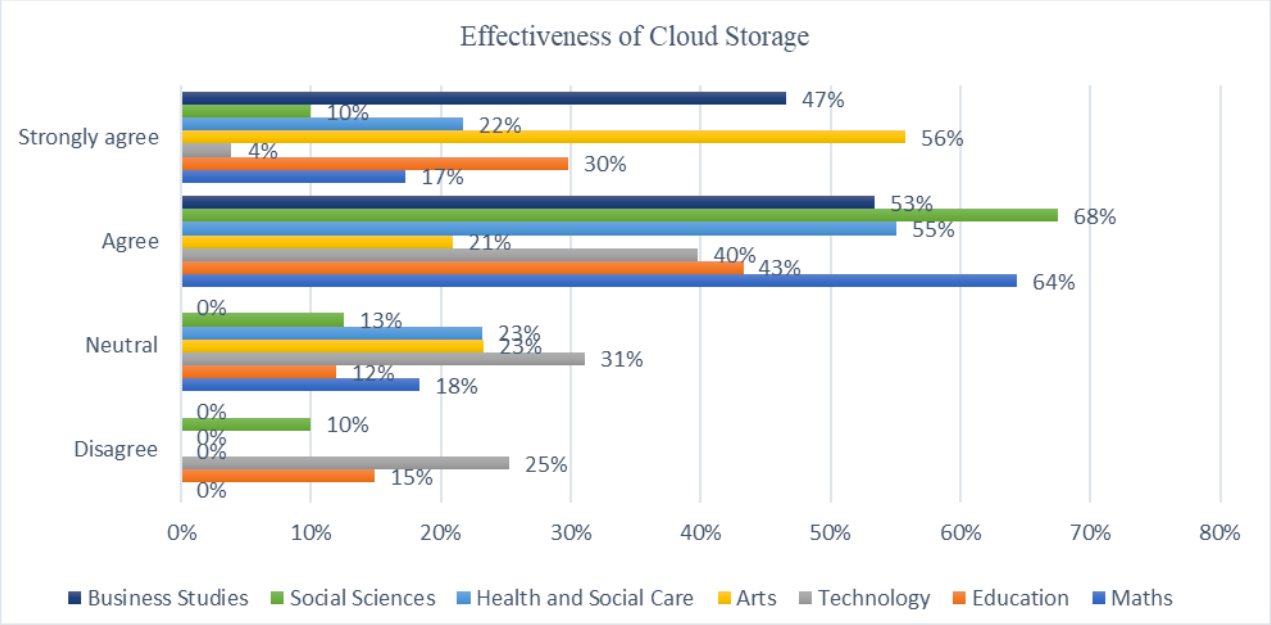


Fig 2. Cloud Storage Effectiveness Analysis

Both male and female respondents have almost equal comfort level with Video Conferencing. Learning management System is the tool that received higher percentage compared to other ICT tools with respect to male respondents. According to the data,online Assessments and E- Content deliverables are equally easy to use.

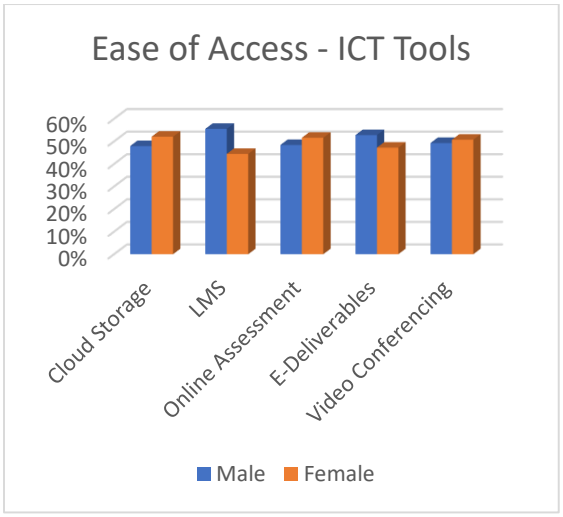


Fig 1. Ease of Access – ICT Tools

Female respondents find easy to use the Cloud storage compared to male respondents. It is shown in Figure1.The results show that thecourse that respondents have taken up changes their perspective toward the effectiveness of ICT tools. Figure 2 represents the perception of learners towards the effectiveness of use of Cloud Storage in daily classroom routine.

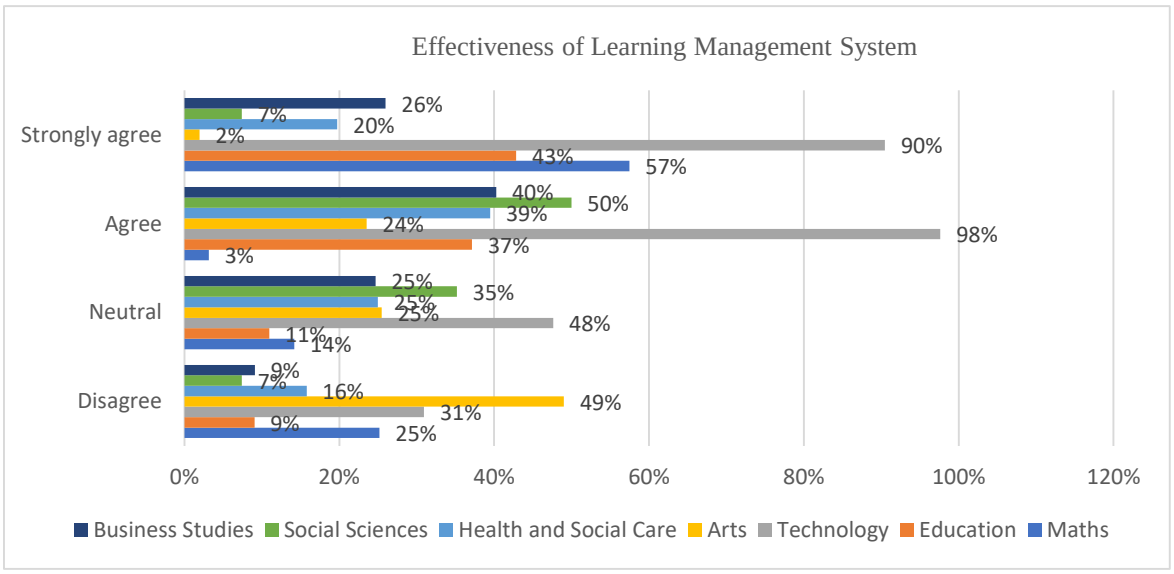


Fig 3. Effectiveness of Learning Management System

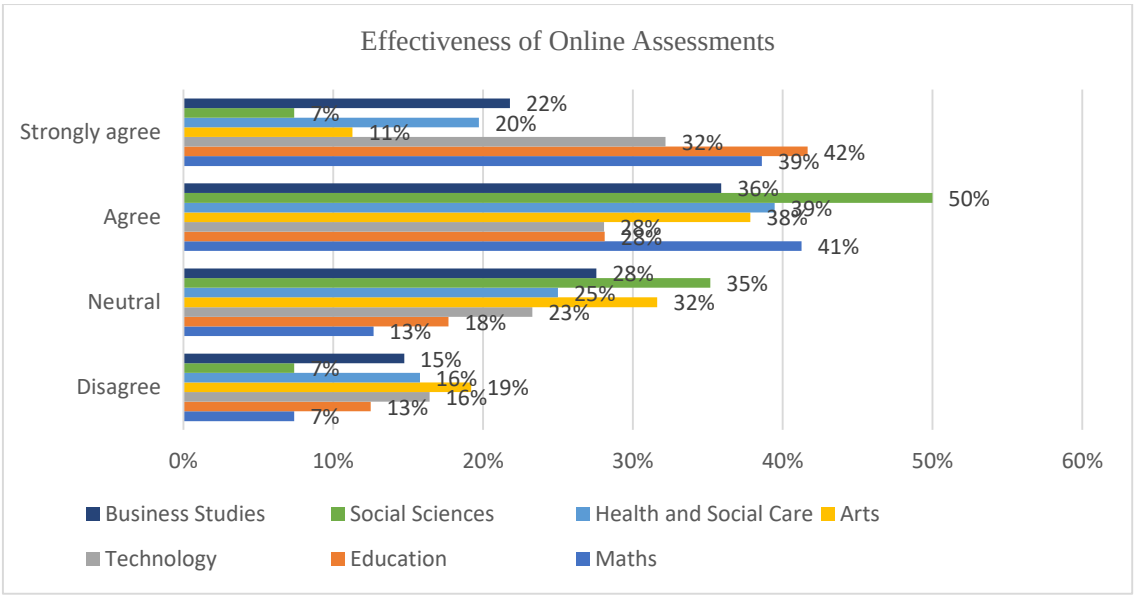
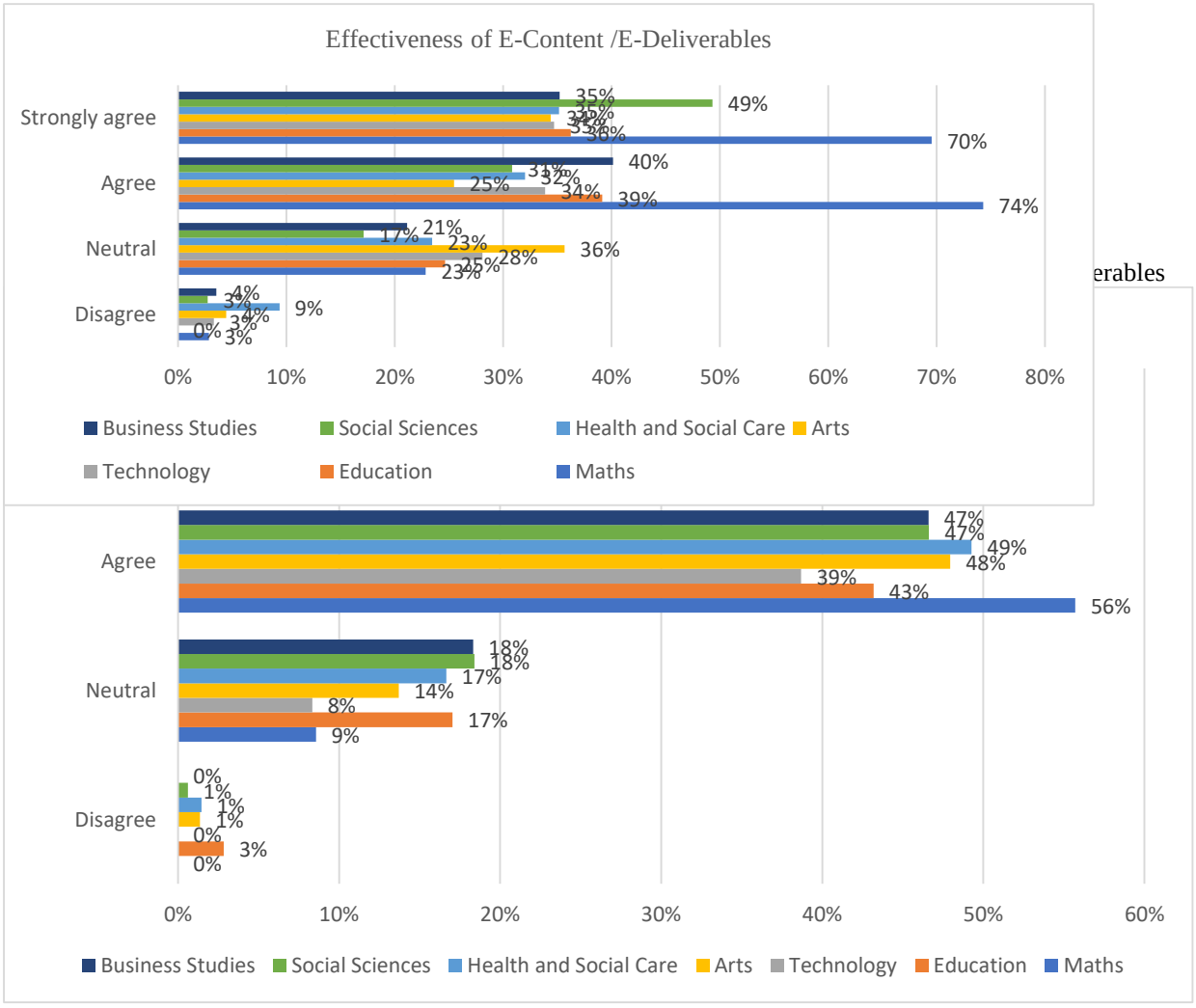


Fig 4. Effectiveness of Online Assessments



erables

Fig 6. Effectiveness of Video Conferencing

Figure 3, depicts the learner's perception on effectiveness of learning management system used in the classrooms, results show that the applications of LMS is not properly utilised in the classroom, hence learners find it less effective for daily learning and management. According to Figure 4, Online assessment has received more disagreement on effectiveness compared to other ICT tools. The reason may vary depending on each learner as the education system has always preferred hand written face-to-face assessment. The speed of system,

network connectivity and many other hardware and software issues need to be verified for a successful and unbiased online assessment.

Figure 5, shows that the effectiveness of E- Content is widely accepted. It is important to find a way to convert dry, factual data into an engaging and interactive form.The students come from diverse backgrounds, so this is an additional challenge.So, the content has to be interactive, engaging, and still simple enough to appeal to a wide range of audience members.To create such a teaching-learning environment, e- deliverables can be a very effective tool by combining different learning strategies aligned with technology.The ability to generate their own e-content allows teachers to be more creative in class and feel they have more control than they did in the past.

In Figure 6, it is clearly evident that the learners have adapted to the online video conferencing. It shows that online classes provided them with a pace-appropriate learning environment. In traditional classroom environment, something like that cannot be done.The use of ICT tools is the way to go forward for education in the future as more students, parents, and teachers are learning how to use these tools.

VII. Conclusion

As a result of this study, we are able to examine and evaluate the use of five important technology tools in daily classroom settings. This paper focuses on five free technologies that are readily available to be incorporated into daily classroom activities. Students were given a questionnaire to ask about Cloud storage, learning management systems (LMS), online assessments, and electronic deliverables as well as video conferencing. Using ICT tools as a learning tool, this paper examines their effectiveness and ease of use from the perspective of learners. As completed responses were analyzed using SPSS, this report was generated using a quantitative approach. It has been demonstrated that using ICT in higher education greatly enhances the learning environment for students. Despite this rapid transition of the world into digital media and information, ICT plays an increasingly important role in higher education and will continue to expand and evolve for many years to come.

REFERENCE

[1] Suleiman, Muhammad & Yahya, Adamu & Tukur, Mohammed. (2020). Effective Utilization of ICT Tools in Higher Education. Xi'an Dianzi Keji Daxue Xuebao/Journal of Xidian University. 14. 588-594.

[2] Fernández-Batanero, J. M., Román-Graván, P., Reyes-Rebollo, M. M., & Montenegro-Rueda, M. (2021). Impact of educational technology on teacher stress and anxiety: A literature review. International Journal of Environmental Research and Public Health, 18(2), 548.

[3] Ampera, D., & Chalid, S. (2021). Development of Blended Learning Type and Flipped Classroom-Based Cultural Arts Subjects. International Journal of Education in Mathematics, Science and Technology, 9(4), 655-667.

[4] Lynch, M., Sage, T., Hitchcock, L. I., & Sage, M. (2021). A heutagogical approach for the assessment of Internet Communication Technology (ICT) assignments in higher education. International Journal of Educational Technology in Higher Education, 18(1), 1-16.

[5] Q. Alajmi, L. A. Al-Nuaimy, G. J. Arul Jose, M. Mastan and M. A. Al-Sharafi, "Cloud computing services and its Effect on tertiary education: Using Google Classroom," 2019 7th International conference on ICT & Accessibility (ICTA), 2019, pp. 1-3.

[6] Raza, S. A., Qazi, W., Khan, K. A., & Salam, J. (2021). Social isolation and acceptance of the learning management system (LMS) in the time of COVID-19 pandemic: an expansion of the UTAUT model. Journal of Educational Computing Research, 59(2), 183-208.

[7] Ferrero-de-Lucas, E., Cantón-Mayo, I., Menéndez-Fernández, M., & Escapa-González, A. (2021). ICT and knowledge management in Teaching and Engineering Students. Comunicar, 29(66), 57-67.

[8] Tuah, N. A. A., & Naing, L. (2021). Is online assessment in higher education institutions during COVID-19 pandemic reliable?. Siriraj Medical Journal, 73(1), 61-68.

[9] Pawl, K. (2018). Effective education: Online course design for adult learners. Lutheran Education, 74-76.

[10] Mishra, Urvashi & Patel, Sarjoo & Doshi, Khyati. (2017). E-CONTENT: AN EFFECTIVE TOOL FOR TEACHING AND LEARNING IN A CONTEMPORARY EDUCATION SYSTEM. International Journal Of Advance Research And Innovative Ideas In Education. 2. 79-83.

[11] Biwer, F., oude Egbrink, M. G., Aalten, P., & de Bruin, A. B. (2020). Fostering effective learning strategies in higher education–a mixed-methods study. Journal of Applied Research in Memory and Cognition, 9(2), 186-203.

[12] S. Martin, E. Lopez-Martin, A. Lopez-Rey, J. Cubillo, A. Moreno-Pulido, and M. Castro, Analysis of new technology trends in education: 2010-2015, IEEE Access. 6 (2018),36840–36848.

[13] Nguyen, T. K., & Nguyen, T. H. T. (2021). The Acceptance and Use of Video Conferencing for Teaching in Covid-19 Pandemic: An Empirical Study in Vietnam. AsiaCALL Online Journal, 12(5), 1-16.

[14] J. Song, H. Zhang, and W. Dong, A review of emerging trends in global ppp research: analysis and visualization, Scientometrics.107 (2016), 1111–1147.

[15] Q. Alajmi, A. Sadiq, A. Kamaludin, and M. A. Al-Sharafi, "ELearning Models: The Effectiveness of the Cloud-Based ELearning Model over the Traditional E-Learning Model," in 8th International Conference on Information Technology, ICIT'2017,Aman, Gordan, 2017, pp. 12-16.

[16] Serhan, D. (2020). Transitioning from face-to-face to remote learning: Students' attitudes and perceptions of using Zoom during COVID-19 pandemic. International Journal of Technology in Education and Science, 4(4), 335-342.

[17] Rawat, KS, Sood, SK. Knowledge mapping of computer applications in education using CiteSpace. Comput Appl Eng Educ. 2021; 29: 1324– 1339.