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The Future of Online Teaching: Trends and Predictions

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ABSTRACT

This study focuses on assessing the utility and limitations of online teaching platforms and tools, to determine their value to teaching. Conducting a primary quantitative survey among 100 educators, the study adopts a positivist philosophy, exploratory research methodology, and deductive analytical approach. The results indicate that students have a fairly good attitude toward the media through which online classes are conducted, and there is a preference for features such as Interactive Whiteboards and File Sharing. However, several challenges such as students' attention, technology problems, and issues related to the use of tools remain. As found in the research, there is a constant demand for the development of the attributes that define the platform and the necessary technical soundness. The suggestions are made both for developers and educators to increase the efficiency of online teaching, based on the challenges, described in the thesis, and the desire to improve the quality of online education.

Keywords: *Online teaching, online teaching platforms, Technology, ICT*

Introduction

As the use of the internet advances as a medium for learning, the quality of online teaching platforms or tools is an active area of study. However, much research is still needed to explain various uses of technology in teaching and learning and the effects of uses. To fill these gaps, this paper presents an assessment of the features, usability, and efficiency of the available online teaching platforms and tools. Thus, based on the analysis of the existing practices and concerns, the study will contribute to identifying the best approaches to support the digital environment in education and further promote effective educational processes for teachers and learners.

The objective of this study is to evaluate the effectiveness of online teaching platforms and tools, identify the challenges faced by educators and students, and provide recommendations to optimize their use.

Research Gap

Technology advancements in the delivery of online instruction have brought a host of innovations designed to improve remote learning. However, there are still considerable gaps in knowledge regarding the

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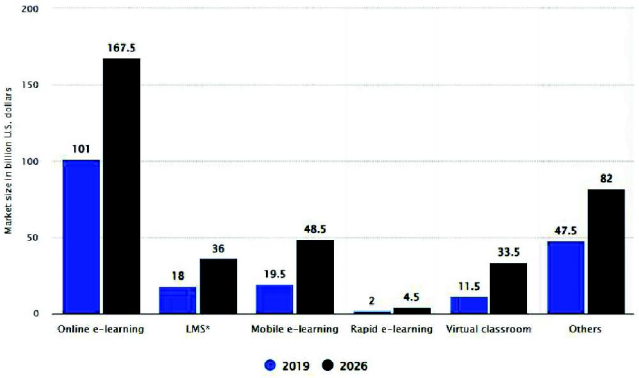
comparative efficacy and real-world applications of these tools. For example, Sun, Anbarasan, &Praveen Kumar (2021) consider artificial intelligence capable of developing intelligent online teaching platforms but point out the absence of wide reviews of such platforms' effectiveness in different educational contexts. Likewise, Ramadani & Xhaferi (2020) describe the teachers' use of the Zoom platform pointing to such concerns as low interactivity and engagement problems but they do not conduct a comparative investigation of multiple platforms. Samoylenko, Zharko, &Glotova's (2022) systematic review of ICT tools and teaching strategies focuses on the design of online learning spaces but does not capture the integration issues that teachers experience. In addition, Ouadoud, Rida & Chafiq, (2021) discuss platforms for e-learning but do not give much detail about assessing the efficiency of certain tools in those platforms. Sofi-Karim, Bali, & Rached (2023) explicate innovative teaching methods through media platforms, but the study fails to provide an in-depth analysis of the real-time application and effectiveness of these methods in diverse learning environments. Filling this gap will offer insights into improving digital education and learning experience for the better.

Research problem

The central issue in research on online teaching platforms and tools relates to a lack of a coherent picture regarding their efficiency and effects on the users. Education has been changed by development of the online teaching platforms and tools, but the problems are still there (Hassan, Mirza & Hussain, 2020). Some of the areas include accessibility, interaction, and usefulness to the learners with different learning difficulties of these tools. Moreover, the digital divide magnifies learning disparities, and no benchmark exists to assess the effectiveness of platforms. Statistically, figure 1 shows that it is estimated that by 2026, the global e-learning market is likely to be valued at around 400 billion U. S. dollars, compared to 200 billion US dollars in 2019. The learning management system (LMS) market, for instance, was valued at about 18 billion US dollars in 2019, proving the continual growth and demand for digital learning solutions across the international context (statista.com, 2022).



Global e-learning market size

(Source: statista.com, 2022)

The sudden switch to online learning has highlighted important issues that may hinder efficient teaching and learning. Using applications like Zoom, Google Classroom, or Microsoft Teams for remote learning is possible but the integration and implementation of such tools are not effective and consistent. The instructors and students encounter issues in the course concerning the service features that create inconsistencies in the interactions (Simamora et al. 2020). Besides, the inconsistency of internet connection and devices also widens the digital deficit; it continues to prevent education from being inclusive and equal. The lack of clearly defined guidelines on how to utilize these applications to enhance teaching and learning due to inadequate training for educators has also led to poor utilization of the platforms and, therefore, low ROI. Meeting these challenges is essential for improving the effectiveness of online education and ensuring that technology is used to its maximum potential to build learning environments that are equitable as well as effective. Further, this research is intended to assess the advantages of these platforms and enhance their utilization and training.

Thus, the research examines online teaching tools and platforms with emphasis on assessment of their efficiency, analysis of problems met by the users, and suggestions for improvement. The context relates the research to the increasing tendency to use the Internet for educational purposes and scarce solutions for enhancing the process (Hofer, Nistor &Scheibenzuber, 2021). Regarding the primary objective of evaluating the effectiveness, the shared information indicates that educators have found online teaching platforms to be useful even though a variation in the level of satisfaction exists. Facilities such as Interactive Whiteboards and File Sharing are considered valuable features, which

contribute to the significance of interactivity (Al-Kahlan &Khasawneh, 2023). However, the study also reveals important barriers like engaging students and managing technical problems. It means that these problems demonstrate the necessity of constant work on improving platforms' development and features. The study also finds that educators experience challenges with tool integration, which supports the literature stating that it is essential to integrate the tools fluidly into education (Ouadoud, Rida & Chafiq, 2021). Therefore, the study points to the need for balancing the use of online teaching technologies by matching them with the educators' and students' current and future needs.

Materials and Methods

Research Design

In this research work, the positivism paradigm has been adopted whereby the subject matter under study has involved empirical data and factual features of online teaching platforms and tools (Park, Konge & Artino, 2020). This approach has also focused on evidence and facts, to the extent that it supports the idea that knowledge can be acquired through the facts and evidence of the real world. The research design has been descriptive and has sought to examine the benefits and difficulties that accompany the various online teaching tools. This has included acquiring some initial background knowledge to lay the groundwork for future research. Also, the research analysis has integrated a deductive framework, whereby the theories have informed the research rather than the opposite.

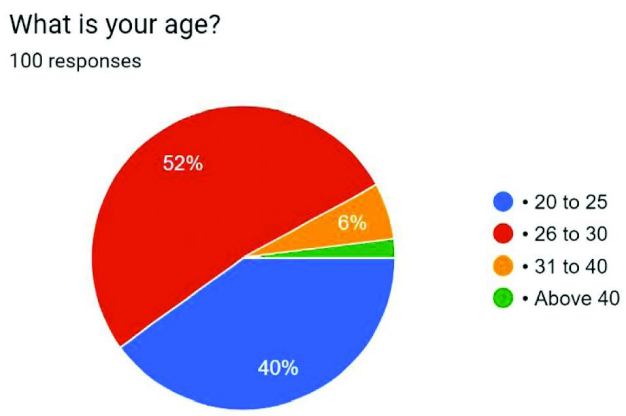
Data Collection and Analysis Technique

The research has applied a primary method of quantitative research, collecting data through a survey to obtain numerical values from educators (Skinner, 2020). An online structured survey has been created using Google Forms, which contains five questions that have been designed to assess the efficiency and problems associated with online teaching platforms. Since the targets are respondents in the employment sector, the survey has been conducted through social media to cover a wide group. Consequently, purposive sampling has been used in order to obtain 100 participants who are currently teaching online, thus obtaining purposive and specific data. Quantitative analysis has been conducted on the collected data and figures and graphs have been used in developing graphical analysis. This analysis technique has helped the study to gain a clear understanding of the educators' experience and their perception towards it, which assisted the study goal of assessing the impact and performance of the different platforms and the challenges faced.

Result

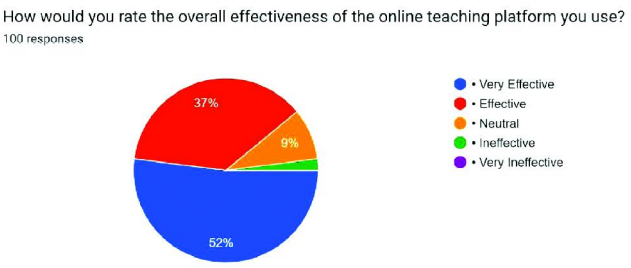
Interpretation of Findings

Age



The pie chart reveals a notable age distribution among respondents, with 40% aged 20 to 25 and a significant 52% in the 26 to 30 brackets. This indicates a strong prevalence of younger adults in the survey population, suggesting that the findings may reflect the preferences and experiences of this age group. Conversely, only 6% of respondents are aged 31 to 40, while those above 40 are minimal. This skewed distribution highlights a potential bias toward the perspectives of younger individuals, emphasizing the need for caution when generalizing the results to a broader demographic.

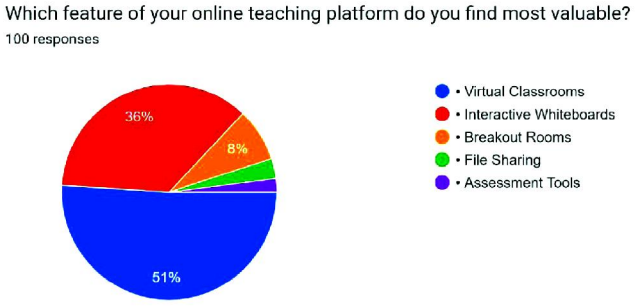
Effectiveness of online teaching platforms



From the pie chart, one can make a positive account of the effectiveness of the online teaching platform. An overwhelming majority of the respondents stated that the platform is either "Very Effective" or "Effective" with 52% and 37% respectively. A mere 9% are in the middle, which shows little confusion when using the devices. Specifically, it is worth mentioning that the responses related to dissatisfaction are rather scarce; few

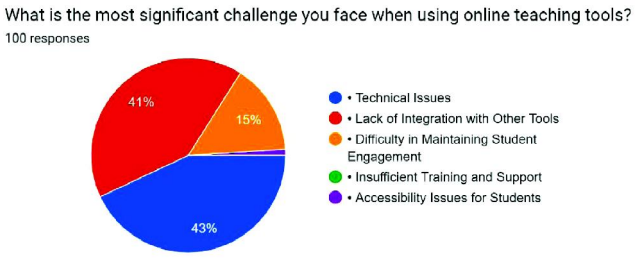
of them are classified as "Ineffective", and none of them are categorized as "Very Ineffective." Such a positive response implies that the platform has the capacity to meet the needs of the users to enhance confidence and belief in the quality education delivery while at the same time having areas to improve on as has been dated by a minority of the users.

Most liked feature of online teaching platforms



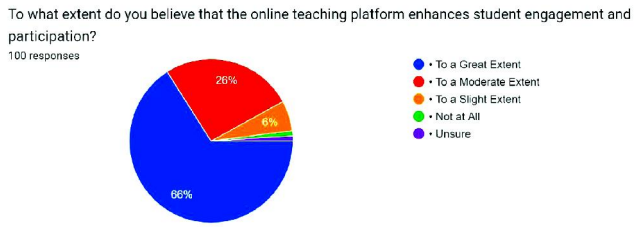
The pie chart shows that the preferred feature of the online teaching platform is File Sharing because 51% of the respondents chose it. This means that the participants valued the ease of sharing documents and learning resources more which is important in the online learning environment. The importance of interaction in real-time ranks Virtual Classrooms with 36%. However, many such features such as Interactive chosen Whiteboards and Assessment Tools were barely mentioned, and this may imply that these features may not fully satisfy the user's requirements to the desired level. Thus, the values proposed for Breakout Rooms also confirm possible deficiencies in the application and reassert the desire for a more involving collaboration tool.

Challenge of online teaching tools '



The pie chart reveals that the most significant challenge faced by respondents using online teaching tools is Technical Issues, cited by 43%. This indicates that problems with connectivity, software, or hardware significantly hinder the learning experience. Following closely, 41% of respondents identified Lack of Integration with Other Tools as a major concern, suggesting that the inability to seamlessly use various applications impedes functionality. Difficulty in Maintaining Student Engagement, reported by 15%, highlights the challenge of keeping students actively involved in a virtual environment. Notably, there are no concerns regarding Insufficient Training and Support, indicating that users feel adequately prepared to navigate the platform.

Level of student engagement and participation



respondents regarding the online teaching platform's ability to enhance student engagement and participation. A significant 66% believe it does so "To a Great Extent," indicating high satisfaction with its interactive features and capabilities. Additionally, 26% feel it enhances engagement "To a Moderate Extent," suggesting that while they recognize benefits, there may be room for improvement. Only 6% reported enhancement "To a Slight Extent," and very few respondents felt it did not enhance engagement at all or were unsure. This overwhelmingly positive feedback underscores the platform's effectiveness in fostering active student involvement.

Discussion

The survey results from the online teaching platforms and tools provide several insights consistent with prior literature on the subject. The discussion of these findings shows the combination of positive perceptions and various obstacles met by educators, with findings showing similar patterns in more recent investigations. Among the findings, the overall satisfaction with most of the online teaching platforms stands out as significant. Several teachers also showed satisfaction and efficiency of these platforms in terms of improvement of their teaching skills with some expressing extreme satisfaction. This perception aligns with Chen, Chen & Lin's (2021) studies, where they explain how artificial intelligence makes teaching online more flexible and interactive. Their research raises awareness that stimulating platforms can enhance learners' experience by providing features suited to their preferences. This

is in agreement with the opinion of the current survey whereby other interactive features like the whiteboards and file sharing were acknowledged by the users emphasizing the utility of such tools in creating an interactivity that is acknowledged as important in a learning process.

However, the survey also exhibits several problems and issues. This has led to the identification of one of the significant concerns about teaching and learning that of student attentiveness. This challenge aligns with previous studies where they observed that interaction still presents a considerable difficulty in online learning contexts (Goldberg et al. 2021; Ramadani & Xhaferi, 2020). Their work reaffirms that teaching in virtual classrooms is not just about technology but that creative solutions and constant communication are essential. It shares this concern with the current survey, as engagement challenges indicate that platforms should include elements encouraging participation and interaction.

Another problem identified in the survey is integration with other tools. This issue corresponds with the findings by Samoylenko, Zharko, and Glotova (2022), who point out that the integration of different educational technologies should be smooth to establish an efficient online learning environment. In addition, previous research has shown that if platforms are incompatible with other tools, there are usually problems and inconveniences in the working processes of educators and students (Coman et al. 2020). This is in line with the survey results which pointed to the fact that educators encounter challenges because of integration issues meaning that improving interoperability among the tools enhances teaching and learning. Technical challenges are also a problem that some educators face. This is in line with the studies that have been done by Simamora et al. (2020) as they talk about how often technical issues can interfere with the process of teaching and learning in an online class. Unfortunately, this is a problem that many students face in online classes and it emphasizes the importance of developing better stable, and efficient technologies (Abdulmajeed, Joyner, & McManus, 2020). Another point of concern that the survey has revealed is technical difficulties and it underscores the need for developing reliable and efficient platforms to enhance the effectiveness of online learning.

The current study also reveals that a considerable number of educators are either indifferent or unhappy with some features of online teaching tools. This is in conjunction with Ouadoud, Rida, and Chafiq (2021) who give detailed information about the different e-learning platforms confirming the fact that most of the e-learning platforms have some useful features of the platform but lack this or that option that may be necessary for the needs of the user or they work as half of effective platforms. The survey findings revealed that the respondents were relatively neutral and negative towards the online teaching tools, thus stressing the importance of carrying out constant assessment and enhancement of the tools to ensure that they meet the users' expectations and needs. Regarding the features, the respondents recognize the benefits of using interactive whiteboards and file sharing. This finding concurs with the literature, where it is acknowledged that the use of interactive components improves the teaching and learning process. Such tools as interactive whiteboards, allow for the creation of several workspaces during an online lecture, generating new ideas as a matter, of course, is key when teaching online (Handley, 2023). Thus, effective mechanisms of file-sharing are also essential for sharing the materials and providing the conditions for the asynchronous model of learning.

The inclusion of these features in the survey under consideration corresponds to the identified advantages in the literature to emphasize the role of these elements in effective online education platforms. This discussion of engagement and feature effectiveness also highlights an important area for improvement (Khoruzha et al. 2022). Whereas some instructors experience a highly positive impact, others post little interaction, some experience technical issues, and others face integration problems. This clear division refers to the necessity to combine the new functions with the actual issues faced by the users. The results imply that, even though useful resources are now available through online teaching platforms, the constant evolution of the educational environment requires further refinement of these platforms.

Implications of the Study

Enhancing Platform Features

As highlighted in the study, it is high time that researchers focus on enhancing the features of teaching online platforms. The results of this study show the strong preference for Interactive Whiteboards and File Sharing entails a high importance for the delivery of efficient online lessons. For example, Interactive Whiteboards enable real-time interaction, which is paramount for capturing learner attention and ensuring that lessons are engaging and interactive (Prasetya, Herwanto& GI, 2023). There are similar tools like Zoom and Microsoft Teams that have similar features, proving

that these tools are highly appreciated in the context of online education (Samoylenko, Zharko, &Glotova, 2022). The suggestion here is that developers of these platforms should pay attention to these features and optimize them for ease of use and integration with other tools for the best results.

Addressing Engagement Challenges

The study reveals a problem with students' engagement in the learning process and states that it is difficult to maintain it. Teaching students in an online setting also involves technology as well as effort and creativity in coming up with techniques as well as effective content (Bereczki & Kárpáti, 2021). Communication features, for example through game aspects or real-time feedback have to be integrated to foster activity on a platform. For instance, applications such as Kahoot! and Quizlet offer practice quizzes, which can be used in live lessons to engage students more effectively. The implication for educators is that they should look for learning environments that facilitate such interactions and also, ensure that they employ these strategies to keep learners engaged.

Improving Technical Reliability

Other communal and technical difficulties have been raised as a problem that aligns with the literature findings regarding the significance of dependable IT systems (Sofi-Karim, Bali, & Rached, 2023). Inconsistent learning sessions are counterproductive and may cause stress among the teachers and learners. Thus, the stability and reliability of platforms become the priorities of platform developers. Updating frequently and having strong support systems are key to reducing technical issues. For instance, Blackboard and Moodle are well-reputed for technical support and regular updates that ensure their operational reliability.

Facilitating Integration

The issue of tool integration therefore opens up the question of improved compatibility between distinct technologies in educational processes. Teaching in distance education settings often requires the integration of different technologies for communication, instruction, and evaluation (Faisal &Kisman, 2020). Specifically, platforms must interact with other education instruments and with Learning Management Systems (LMS) in particular to minimize the obscurity in the teaching process. For instance, adding Google Classroom to other applications in Google Workspace can make everything easier and learning more enjoyable.

Recommendations for Improvement

Based on these considerations, it is suggested that both developers of the platforms and teachers should pay attention to the improvement of online education tools. While providing features to support interactivity and affiliation, it is crucial to consider technological stability and compatibility for developers (Graniæ, 2022). In this regard, educators should harness these advanced features, and embrace new forms of teaching practices to handle the engagement issues.

Conclusion

The research on the use of online teaching platforms and tools widely indicates the benefits and contributions to education in the context of the development of interactivity and resources. However, other challenges like student engagement, technical reliability, and integration of the tools are still areas of concern. Solving these problems is vital in enhancing the quality of online learning. Platform developers should consider optimization of the interactivity as an essential element, stability of the technical support, and compatibility with other tools. Some of the features need to be tackled concerning engagement challenges and educators have to change their approach concerning the mentioned tools. Thus, constant enhancement of the technology and pedagogy aspects is vital for the further enhancement of the online learning process.However, concerns such as the digital divide and digital literacy may pose significant challenges. Governments at both the national and state levels are organising digital literacy campaigns and making ongoing efforts to guarantee that the internet's potential in the education sector is fully explored.

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Availability of data and materials

No datasets were generated or analysed during the current study

Declarations

Ethics approval and consent to participate

Not applicable.

Consent for publication

Not applicable.

Competing interests

The authors declare no competing interests.

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