



THE IMPACT OF EDUCATIONAL TECHNOLOGY ON THE TEACHING AND LEARNING PROCESS AT BENAZIR BHUTTO SHAHEED UNIVERSITY LYARI

Ayesha Ayaz¹, Rukhsar Afzal², Mahmood ul Hasson Mujahid³

1. Lecturer, Iqra University, Karachi Ayesha.ayaz@iqra.edu.pk

2. Research Scholar, Dept. of Education, Benazir Bhutto Shaheed University, Lyari, Karachi rukhan829@gmail.com

3. Research Scholar, Dept. of Education, Benazir Bhutto Shaheed Uni. Lyari, Karachi mahmoodszabist@yahoo.com

ABSTRACT

The use of educational technology has extended throughout the globe and is now practically ubiquitous. The use of technology in education has grown significantly, giving rise to online platforms where users may quickly produce, share, bookmark, and network content. Teachers are among the major users of educational technology. This study evaluates how educational technology affects the process of teaching and learning at Benazir Bhutto Shaheed University in Lyari, with a particular emphasis on how it affects teachers. This study sets out to investigate how educational technology functions in university-level teaching and learning. There were hypotheses developed, and a survey approach was used in the quantitative study design. A thorough examination of the literature review was carried out. Thirty teachers made up the heterogeneous study population. The approach of stratified random sampling was employed. There were seventeen Likert-scale items in the questionnaire. Utilising statistical software (SPSS version 21),



data was examined. The results showed that instructional technology significantly improves teaching and learning, increasing its efficacy. Based on these conclusions, specific recommendations were made.

Keywords: Online platforms, Content Creation, Networking, University level education, Quantitative research, Survey strategy, SPSS analysis, Positive effect

1. INTRODUCTION

Over the past 20 years, universities have significantly increased instructional technology spending to enhance student learning. Learning processes, pedagogies, and institutional structures at universities have all been significantly changed by educational technology (Yas et al., 2024). It is yet unclear, however, how these technologies affect academic performance and returns on investment in education (Rolle, 2024). The many academic researchers who have attempted to approach this topic from theoretical, practical, and empirical perspectives have encountered two main obstacles.

First, tracking and accurately defining student achievement is challenging (Gümüş, et al., 2024). Because the environment is constantly changing, it might be difficult to distinguish the effects of instructional technology from its surroundings. As far as student performance is concerned, no consensus exists. The traditional approach focuses on success and curriculum by assessing how effectively students understand courses and earn their degrees or grades (Felder, & Brent, 2024). A more detailed description also includes all the competencies, abilities, and attitudes that are learned through schooling. The more restrictive definition makes it feasible to see the effects of changes made to higher education.

The relationship between the use of instructional technology and higher education student performance has been the subject of conflicting findings in the literature (Lambert, et al., 2024).

Previous economic research has not reached a consensus on how it impacts students' academic achievement (Klapp, et al., 2024). This work aims to accomplish two objectives: first, it will present a synopsis of the major findings from the extensive literature; second, it will present two complementary explanations for the contradictory results.

We begin by outlining the substantial body of research that has been done on the direct effects of educational technology on learning. However, it is more appropriate to analyze the indirect impacts through traditional channels. Since the attributes of the teacher, the learning environment, and the students themselves are the main determinants of student success, educational technology can have an impact on these factors and, consequently, educational outcomes (Lai, et al., 2024). Therefore, it is more plausible that the observed differences in student performance are caused by differences in how instructional technologies and learning processes affect these common characteristics (Gümüş et al., 2024).

This study aims to investigate instructional technologies. The goal of the study of educational technology is to enhance the process of teaching and learning by analyzing, designing, creating, implementing, and assessing learning environments and resources. It is imperative to remember that the primary goal of educational technologies is to improve educational teaching (Ergashevich, et al., 2024). Therefore, we must first determine the goals and prerequisites of education to design the ideal learning environments for pupils. Then, we must apply every piece of knowledge including technological knowledge that we have.

Another approach to looking at instructional technology is as a technique to address problems in education, like the need to develop critical thinking and foundational abilities, among other problems (Felder & Brent, 2024). The process begins with identifying the problem, looking into the factors that contribute to it, and suggesting possible solutions. Next, the curriculum and student

body are looked at. Selecting resources and instructional materials that fit the curriculum and style of instruction comes next, after deciding which teaching strategies work best in the specific situation (Romiszowski, 2024). Finally, the program is implemented, evaluated, and modified as needed to meet the improvement goals of Lasbella University students.

The variety of learning resources has significantly increased because of numerous technological developments. The tools used in today's instructional materials include more contemporary devices like computers, software, LCD projectors, the Internet, satellite, interactive TV, audio and video conferencing, artificial intelligence, and VCRs and camcorders in addition to more conventional ones like slide projectors, opaque projectors, VCRs, and digital cameras (Ogunmakin, 2024). According to van der Bogert, 2024 university professors must understand what resources are available, how to use them, why they should be used, when to use them, and how to incorporate them into the teaching and learning process to improve educational instruction. Teachers need to think about how these newer materials can affect what we teach and how we learn (Darling-Hammond, et al., 2024). The first step is to understand these resources and how to use them. However, we must not delay in discussing how these resources should be used and how they impact university courses and education.

Both a teacher-led, knowledge-based approach and a student-centered, constructivist, progressive approach to learning can be maintained with the use of educational technologies (Simon, 2024). Understanding the potential and appropriate application of these technologies is crucial to enhancing the educational experience for educators and learners alike (Familoni, & Onyebuchi, 2024).

Like research in other distinguished disciplines, this study will contribute fresh and insightful information to the body of existing literature, making it noteworthy. It seeks to pinpoint and draw

attention to subjects that, in the quickly evolving technological era, have received little or no study. The research aims to enhance our comprehension of the impact and potential of instructional technology in a university setting by concentrating on these gaps (Al Husaeni, et al., 2024). It is expected that this research will have a significant positive impact on Benazir Bhutto Shaheed University Lyari instructors and students alike. Educators can transform their teaching strategies and enhance student involvement and academic achievements by applying the study's findings on the efficient incorporation of educational technologies into their approaches (Eden, et al., 2024). The study will shed light on how these technologies can improve students' educational experiences by increasing the effectiveness, interactivity, and accessibility of learning.

By exploring these unexplored areas, the study will add to the body of knowledge already in existence and offer useful suggestions for educators and decision-makers. The goal of the project is to investigate the subtleties of tailoring instructional technology to the requirements of the university's student body to improve teaching and learning. The study highlights the significance of adjusting to technology progress and utilizing it to establish a more sophisticated educational setting.

This study is to investigate in detail how Benazir Bhutto Shaheed University Lyari uses instructional technology and how that use affects instruction and learning. The use of educational technologies by educators and students today, the kinds of technologies used (such as learning management systems, multimedia tools, online resources, and digital classrooms), and how these technologies have changed conventional teaching methods are just a few of the important topics it covers. Along with analyzing these technologies' effects on learning experiences, skill development, and academic accomplishment, the study also looks at how effectively they improve student engagement, interaction, and instructional delivery (Berdiyeva, 2024).

It also looks at how students' usage of technology relates to skills like critical thinking, problem-solving, and digital literacy (Gladyshev, et al., 2024). In embracing educational technology, educators and students encounter several difficulties and roadblocks, including those about the digital divide, accessibility, technical infrastructure, and change aversion. It evaluates the efficacy of professional development programs, the readiness and training of teachers to use educational technology, and the attitudes and views of students toward technology in the classroom (Shumeiko, et al., 2024). It also assesses the degree to which students are adaptable and prepared to accept new technologies, the impact that institutional rules and support networks have on the integration of technology, and the accomplishments of university-led efforts to encourage the use of technology in the classroom.

To improve the university's technological initiatives, the study intends to find best practices and successful models that may be modified by comparing the university's use of educational technology with those of other institutions. To maximize the use of educational technology and eventually enhance teaching and learning (Haque, et al., 2024) at Benazir Bhutto Shaheed University Lyari, the results and recommendations will direct plans, policies, and programs.

Utilizing scientific knowledge to solve issues and develop answers is what technology is all about. It includes the cooperation of workers worldwide to make these things and the efficient use of fewer resources in manufacturing. Fundamentally, the goal of technology is to improve productivity, efficiency, and problem-solving abilities in a variety of domains (Veríssimo et al., 2024). Its use in education has completely changed the way that knowledge is obtained and shared, offering cutting-edge resources and platforms that make teaching and learning easier. A teacher is a person who assists students in gaining information, skills, or virtue. They are sometimes referred to as schoolteachers or educators. This job might be informal, like when

someone helps a coworker with a task, or formal, like in an educational setting. Teachers have a crucial role in leading students through the learning process, developing their critical thinking and problem-solving abilities, and influencing their intellectual and moral development (Jamil, et al., 2024). Proficiency in the subject area, pedagogical abilities, and the capacity to motivate and captivate pupils are essential for effective teaching.

Learning is the process of picking up new knowledge, abilities, behaviors, attitudes, values, and preferences. Not only do animals and some robots have the capacity to learn, but there is evidence to suggest that certain plants may also be capable of learning in some capacity (Thagard, 2024). A vital component of human development is learning, which gives people the ability to change, evolve, and react to their surroundings. It encompasses a range of settings and approaches, such as self-directed study, experiential learning, and formal education.

The act of transmitting or gaining general knowledge, refining one's reasoning and judgement, and mentally preparing oneself or others for adulthood is known as education. It includes a wide range of educational opportunities that support a person's cognitive, social, and emotional growth. Education is essential for social mobility, economic prosperity, and personal development because it gives people the information and skills they need to function in society and make meaningful contributions (Dodin, et al., 2024).

A university is a postsecondary educational and research establishment that grants degrees in a range of subjects. Universities often provide a broad selection of academic programs for both undergraduate and graduate study. They are divided into two divisions: one for undergraduates that gives bachelor's degrees, and another for graduates that includes professional and graduate schools and grants advanced degrees. Universities act as hubs for education and research, encouraging creativity and intellectual advancement (Nyiringango, 2024). They contribute

significantly to the advancement of education and the advancement of society by offering facilities for teaching, research, and the sharing of knowledge.

In summary, the interconnected components of the educational ecosystem include technology, instructors, learning, and universities. Teachers support and encourage students in their learning journeys while technology improves the effectiveness and accessibility of education (Bong & Chen, 2024). The process of learning is complex and vital to both individual and societal growth. Universities, as higher education establishments, offer the environment and resources required for advanced study and research, influencing the advancement of knowledge and innovation in the future.

2. LITERATURE REVIEW

2.1 H1: There is a significant relationship between education technology and the teaching process.

Social science theories originated in the field of communication. It explains how, over time, an idea or product gains momentum and spreads through a specific population or social system. The theory emphasizes the importance of perceiving an idea, behaviour, or product as new or innovative for diffusion to occur. Diffusion involves several stages: awareness, interest, evaluation, and trial and adoption. This process spreads ideas or practices through specific channels within a social structure, such as neighbourhoods. Different types of innovations require different adoption units, and Bittner (1984) highlights that media can play a crucial role in raising awareness, generating interest, facilitating evaluation, and encouraging trial before adoption. Rogers' theory examines how new ideas are disseminated among people via media, seeking to explain the rate at which new ideas and technologies spread through cultures. Adoption is not simultaneous across a social system; it is a process where some individuals are more likely to adopt

the innovation than others. This theory was popularized by Everett Rogers, a professor of rural sociology, in his 1962 book "Diffusion of Innovations."

According to Gul and Rafique's 2017 investigation, the 21st century has seen a swift transition from traditional classroom instruction to newly created learning methodologies. According to Skilbeck & Connell (2004), a teacher's use of various teaching strategies reveals how much they value education. The new strategies also help students develop better learning skills and attitudes towards learning, as well as increase their capacity to handle the challenges of a world that is changing quickly. pupils from a variety of backgrounds attend educational institutions; if teaching methods are inadequate, this could cause pupils to get distracted, operate poorly, or lose confidence in their own abilities. Teachers worked tirelessly to adapt their teaching methods to students' enlarged intellectual capacities in order to overcome all of these challenges. A quantitative survey with a sample size of 253 secondary school teachers was used for the study. The findings demonstrate that altering the teaching approach improved students' aptitude and helped them enhance their intellectual capacities. It also enhanced teachers' professional development and teaching abilities, but the study has limitations that call for more research of this kind to fully understand how altering instructional strategies and implementing more advanced ones can raise students' attention and intelligence.

According to Farisi (2016), technology is necessary in today's world. It has altered the way that education is perceived across the board, including social studies (Kerka, 1997). The entire globe is currently working on integrating technology into every subject. Numerous theories also highlight the importance of making learning more meaningful and pleasurable, something that was previously impossible in conventional classroom settings (AlexiouRay, Wilson, Wright & Peirano, 2003). Technology integration in social studies classes is critical to improving students' conceptual

learning and solid subject-matter comprehension. Students' interest is further heightened when they participate actively in the classroom.

Acikalin and Duru (2005) investigate the use of technology in social studies classes. Technology nowadays has altered conventional instructional techniques in addition to offering tools for improved learning (Asan, 2003). Classrooms are no longer restricted to traditional learning thanks to new technology and the internet, and students may acquire more experience and analytical skills (Vanfossen, 2001). Technology is helpful in social studies not just from an educational standpoint. Additionally, it significantly impacts how society functions on a global, political, social, and economic level (Whitworth & Berson, 2002). According to research, computer technologies assist students learn while also fostering their capacity for critical thought, problem-solving, and sound judgement (Berson, 1996; Rice & Wilson, 1999).

Curry and Cherner (2016) look into the methods and ideologies of active, diverse social studies educators who meet the demands of teaching in the present period while elevating their own social studies teaching philosophies. They contend that for classroom instruction to have any real meaning, teachers must match their academic topic knowledge bases. The usage of technology, as demonstrated by computers, tablets, and smartphones, has fundamentally changed societies worldwide (Kuhn, 2012). According to Koehler and Mishra, content knowledge refers to a teacher's understanding of the subject matter and how to teach it so that concepts and ideas are apparent and there are numerous ways to complete a task with the use of technology. Three people were interviewed and observations were made as part of this qualitative investigation. The study's conclusions showed that while all of the teachers chosen for the investigation were extremely competent and successful educators, they employed technology in respective fields in different ways. The study goes on to show that educators can incorporate various technological approaches

to teaching social studies into their lessons while still adhering to their teaching philosophy and promoting literacy.

2.2 H2: The integration of educational technology positively impacts student engagement and learning outcomes.

This study investigates how interactive teaching methods at Bozhou University's college vocal music program affect student involvement and learning outcomes.

The research methodology used in Cao Jiakai's (2024) study is:

A qualitative research methodology to investigate and comprehend the mechanisms of improving learning outcomes and student engagement in college vocal music education through interactive methods. Participants: Purposive sampling was used to choose 25 undergraduate vocal music students from Bozhou University.

Data collection: semi-structured interviews to investigate how students feel about the way vocal music is taught now and the interactive methods that are used.

Data analysis: Using qualitative data analysis software, thematic analysis of interview data identifies recurrent themes and patterns through an iterative coding process. When it comes to vocal music training, students have different requirements and preferences. While some students demand more involved approaches, others prefer traditional methods. Personalized feedback, technological integration, and group projects are examples of interactive components that have been shown to positively correlate with student engagement. It has been discovered that interactive methods improve a variety of transferable skills necessary for the overall development of students in addition to musical abilities.

According to Berson (2014), social studies foster critical thinking, problem-solving abilities, and citizenship. Previously, this subject was taught using conventional teaching techniques. These days, technology is used more in practically every discipline, including social studies. The right use of technology in this subject's instruction could boost students' motivation. Up to 80% more learning can be achieved by students when social studies are taught on a computer. Students who engage in this type of learning receive insightful feedback that boosts their motivation and sense of self-efficacy. According to Ehman and Glenn (1991), using technology effectively in social studies classes is crucial. There is practically little use of technology in social studies classes. Appropriate technology needs to be implemented in Social Studies to improve results and motivate students more.

The use of technology improves learner interest, motivation, and personalized learning experiences, according to this paper's investigation of the effects of technology integration on English language learning and student engagement.

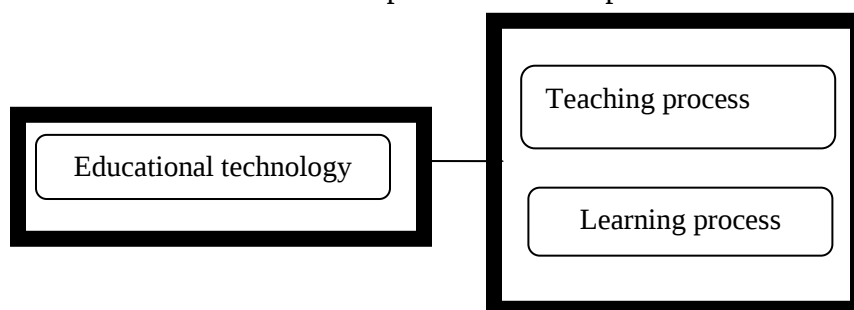
Data for the study were gathered using a structured survey and a quantitative research design. Participants who are actively involved in ELT, including both educators and learners, were chosen through the technique of purposeful sampling. The questionnaire was given out online and included multiple-choice, open-ended, and Likert-scale items. Both descriptive and inferential statistics were applied to the data analysis. The study complied with informed consent and data confidentiality guidelines for ethical research.

Most participants (60%) utilize technology in ELT regularly, especially virtual classrooms and language learning applications. According to 65% of respondents, technology improves language proficiency, particularly in listening and vocabulary. Among those surveyed, 70% felt that technology, especially interactive and multimedia technologies, increases student motivation and

engagement. The survey also noted barriers to technology integration, such as restricted access, glitches, and issues with the caliber of digital content.

Figure No 1: Conceptual Framework/Model

The conceptual framework consists of dependent and independent variables of the study.



3. METHODOLOGY

This study used a quantitative method in an exploratory research design. The principal technique employed was a survey, which the researcher personally conducted to guarantee useful participant input. This method was selected to directly collect extensive data from the respondents while they were in class.

Teachers at Benazir Bhutto Shaheed University, Lyari (BBSUL) in Karachi made up the study's population. All the teachers working at the school were included in the total population. To guarantee representation from a range of population subgroups, a stratified random selection technique was used. Thirty BBSUL teachers made up the final sample; they were selected to offer a representative and balanced subset of the greater population.

To guarantee sufficient representation of various segments of the BBSUL teaching population, stratified random sampling was chosen. With this method, individuals are chosen at random from each stratum, which are the population's diverse subgroups. This method aids in the creation of a representative sample that yields more trustworthy and broadly applicable results. An organized questionnaire was used to gather data for this investigation. The Likert scale, which

enables respondents to indicate their degree of agreement or disagreement with various assertions, served as the basis for the questionnaire's design. Apart from the normal questions, there were also custom-made questions that were adapted to the unique circumstances of BBSUL. This hybrid strategy made sure that the information gathered was pertinent to the goals of the study and standardized for comparison.

To ensure proper data collection and maximize response rates, the questionnaires were personally distributed by the researcher to the instructors during school hours. Being present during the administration allowed the researcher to answer any questions or concerns from the participants, which improved the responses' dependability.

Approval from the BBSUL Ethical Review Board was obtained prior to study initiation. This guaranteed that the study complied with moral principles and regulations, safeguarding the participants' privacy and rights. All participants gave their informed consent after being informed that the information they provided would only be used for study.

The Statistical Package for the Social Sciences (SPSS) was used to analyze the data that had been gathered. To interpret the data, both descriptive and inferential statistics were used. While inferential statistics assisted in deriving conclusions about the larger population based on sample data, descriptive statistics offered an overview of the fundamental characteristics of the data. Graphical representations of the analysis's findings were used to make the conclusions easier to read and comprehend.

This methodology describes an exacting and methodical way to go about doing the study. The study attempts to provide a thorough grasp of the traits and perspectives of the teaching population at BBSUL by utilizing a combination of descriptive and inferential statistics along with a stratified

random sample method. The validity and reliability of the data gathered are additionally guaranteed by the ethical concerns and the individual administration of the questionnaire.

4. RESULTS AND DISCUSSION

This study investigated the traits and opinions of professors at Benazir Bhutto Shaheed University, Lyari (BBSUL) in Karachi using an exploratory research design and a quantitative methodology. Data from a stratified random sample of thirty teachers was gathered using a survey that the researcher physically conducted. Using SPSS, descriptive and inferential statistics were used to analyze the results.

Table:1 Case processing summary

		N	%
Cases	Valid	30	100.0
	Excluded	0	.0
	Total	30	100.0

The Benazir Bhutto Shaheed University, Lyari (BBSUL) faculty completed and returned all 30 of the questionnaires that were sent to them, according to the case processing summary. This resulted in 100% legitimate cases with no exclusions. With 30 valid responses, this strong data set guarantees great data quality and suitability for statistical analysis, offering a solid basis on which to draw significant findings from the research.

Reliability Statistics	
Cronbach's Alpha	N of Items
.770	17

According to the study's reliability statistics, the 17 questionnaire items had a Cronbach's Alpha of 0.770. When the Cronbach's Alpha value is more than 0.7, it generally indicates that the internal consistency of the questionnaire is satisfactory and that the items accurately measure the target constructs. This degree of dependability shows that the information gathered is trustworthy and appropriate for additional study.

Table 2: WORK SHIFT

		Frequency	Per cent	Valid Percent	Cumulative Percent
Valid	morning	22	71.0	73.3	73.3
	evening	8	25.8	26.7	100.0
	Total	30	96.8	100.0	

The table illustrates the distribution of work shifts among instructors at Benazir Bhutto Shaheed University, Lyari (BBSUL). The morning shift is occupied by 22 teachers (71.0%), while the evening shift is occupied by 8 teachers (25.8%) of the 30 respondents. The morning shift is worked by 73.3% of the respondents, while 26.7% work the evening shift, as indicated by the valid per cent column. The cumulative percentage suggests that the evening shift has accounted for 100.0% of the responses. This distribution emphasizes that the morning shift is the primary assignment for most of the instructors at BBSUL.

Table: 3 Model Summary

R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.337 ^a	.113	.078

An R-value of 0.337 is indicative of a moderate positive correlation between the independent and dependent variables, as shown in the model summary in Table 3. The model explains approximately 11.3% of the variance in the dependent variable, as indicated by the R Square value of 0.113. The Adjusted R Square value of 0.078, which accounts for the number of predictors in the model, suggests that approximately 7.8% of the variance is accounted for after the predictors are taken into consideration. This relatively low explanatory power suggests that there are additional factors that are not accounted for in the model and may be affecting the dependent variable.

Table 4 **ANOVA^a**

		Sum	of			
Model		Squares	Df	Mean Square	F	Sig.
1	Regression	14.746	3	4.915	3.243	.000
	Residual	115.204	76	1.516		
	Total	129.950	79			

a. Dependent Variable: teaching, learning process.

b. Predictors (Constant), educational technology.

The regression model significantly explains a portion of the variance in the dependent variable, as evidenced by the F-statistic of 3.243 and a p-value of .000, which is below the threshold of 0.05, as indicated by the ANOVA table. This implies that the dependent variable is statistically significantly influenced by the independent variables that are included in the model. The regression sum of squares (14.746) compares to the residual sum of squares (115.204), indicating that the model explains a portion of the variation, but a significant amount remains unresolved. This underscores the potential influence of other factors that are not included in the model.

5. CONCLUSION

In conclusion, Social networking sites have become a significant topic of discussion and analysis due to the global attention that the new trends in educational technology have garnered, particularly among the youth and students. The objective of this investigation was to investigate the impact of educational technology on the teaching and learning process at Benazir Bhutto Shaheed University in Lyari. The results indicated that a substantial number of educators employ educational technology primarily for entertainment, which does not significantly contribute to their educational objectives, even though many of them effectively utilize it as a medium of communication and knowledge. Educators who employ educational technology with a purpose can improve their academic performance, while those who employ it for leisure frequently squander time and may even harm their academic performance.

Several guidelines have been provided in this study to facilitate the use of social media as an effective instrument for teaching and learning. The emphasis is on the use of a variety of applications that are in alignment with the interests of students to create engaging educational experiences. The research also emphasized the potential negative effects of educational technology, including the diversion caused by multitasking and ubiquitous connectivity, which can divert students' attention from their studies. The impact of technology on academic performance can be substantially influenced by other variables, including the amount of time spent on educational technology, gender, academic status, and discipline, as demonstrated by other studies. The results suggest that the use of social media by pupils can have both positive and negative consequences, contingent upon its implementation. The research demonstrates that technology does not impede students' learning capabilities; rather, it provides them with new knowledge and skills. The key to leveraging the advantages of educational technology is its intentional and constructive application, which can facilitate personal and academic development. Consequently,

educators and students must implement strategies that optimise the pedagogical potential of technology while simultaneously reducing its distractions.

REFERENCES

- Al Husaeni, D. F., Al Husaeni, D. N., Nandiyanto, A. B. D., Rokhman, M., Chalim, S., Chano, J., ... & Roestamy, M. (2024). How technology can change educational research? definition, factors for improving quality of education and computational bibliometric analysis. *ASEAN Journal of Science and Engineering*, 4(2), 127-166.
- Berdiyeva, S. (2024). EXPLORING INNOVATIVE APPROACHES TO TEACHING. *Modern Science and Research*, 3(1), 923-927.
- Bong, W. K., & Chen, W. (2024). Increasing faculty's competence in digital accessibility for inclusive education: a systematic literature review. *International Journal of Inclusive Education*, 28(2), 197-213.
- Darling-Hammond, L., Schachner, A. C., Wojcikiewicz, S. K., & Flook, L. (2024). Educating teachers to enact the science of learning and development. *Applied Developmental Science*, 28(1), 1-21.
- Dodin, M., Findeisen, S., Henkel, L., Sachs, D., & Schüle, P. (2024). Social mobility in Germany. *Journal of Public Economics*, 232, 105074.
- Eden, C. A., Chisom, O. N., & Adeniyi, I. S. (2024). Parent and community involvement in education: strengthening partnerships for social improvement. *International Journal of Applied Research in Social Sciences*, 6(3), 372-382.
- Ergashevich, E. A. (2024). DEVELOPMENT OF STUDENTS' THINKING AND USE OF MODERN TEACHING TECHNOLOGIES IN ORGANIZING EDUCATIONAL LESSONS IN

OTML. Excellencia: International Multi-disciplinary Journal of Education (2994-9521), 2(1), 287-291.

Familoni, B. T., & Onyebuchi, N. C. (2024). Augmented and virtual reality in us education: a review: analyzing the impact, effectiveness, and future prospects of ar/vr tools in enhancing learning experiences. *International Journal of Applied Research in Social Sciences*, 6(4), 642-663.

Felder, R. M., & Brent, R. (2024). *Teaching and learning STEM: A practical guide*. John Wiley & Sons.

Gladyshev, V., Milyaeva, E., & Rezvushkina, S. (2024). Critical thinking as a requirement for digital literacy in the current socio-cultural context. *Revista Internacional de Filosofía Aplicada HASER*, (15), 121-152.

Gümüş, S., Şükrü Bellibaş, M., Şen, S., & Hallinger, P. (2024). Finding the missing link: Do principal qualifications make a difference in student achievement?. *Educational Management Administration & Leadership*, 52(1), 28-51.

Haque, M. A., Haque, S., Zeba, S., Kumar, K., Ahmad, S., Rahman, M., ... & Ahmed, L. (2024). Sustainable and efficient E-learning internet of things system through blockchain technology. *E-Learning and Digital Media*, 21(3), 216-235.

Jamil, M., Anwar, M., & Ali, M. J. (2024). DEVELOPING CRITICAL THINKING SKILLS IN ENGLISH CLASSROOMS AT THE SECONDARY LEVEL: TEACHERS' PERSPECTIVE. *Journal of Social Sciences Development*, 3(1), 76-85.

Klapp, T., Klapp, A., & Gustafsson, J. E. (2024). Relations between students' well-being and academic achievement: Evidence from Swedish compulsory school. *European Journal of Psychology of Education*, 39(1), 275-296.

- Lai, C., Chen, Q., Wang, Y., & Qi, X. (2024). Individual interest, self-regulation, and self-directed language learning with technology beyond the classroom. *British Journal of Educational Technology*, 55(1), 379-397.
- Lambert, K., Ford, A., & Jeanes, R. (2024). The association between physical education and academic achievement in other curriculum learning areas: A review of literature. *Physical Education and Sport Pedagogy*, 29(1), 51-81.
- Nyiringango, P. (2024). High-Quality Education and Research Collaboration Play a Key Role in the Success of University-Integrated Hubs: Case Study of Kenyatta University–Chandaria Centre for Innovation. *African Journal of Education and Practice*, 10(1), 46-55.
- OGUNMAKIN, R. (2024). Traditional And Modern System Of Teaching In Higher Education Open Distance Learning (Odl) And Hybrid Format. *International Journal of Education, Library and Information Communication Technology*, 2(1).
- Rolle, A. (2024). Out with the old—in with the new: Thoughts on the future of educational productivity research. In *K-12 Education Finance* (pp. 31-56). Routledge.
- Romiszowski, A. J. (2024). Producing instructional systems: Lesson planning for individualized and group learning activities. Taylor & Francis.
- Shumeiko, T., Bezhina, V., Zhiyenbayeva, A., Bozhevolnaya, N., & Zubko, N. (2024). Improving the readiness of teachers for using distance technologies in supplementary technical education: A case study in Kazakhstan. *International Journal of Innovative Research and Scientific Studies*, 7(1), 92-106.
- Simon, S. (2024). Synthesising New Pedagogies for Deep Learning with Transformative Learning Theory and the QEP for Meaningful Practices in the Secondary English Language Arts Cycle 2 Program (Doctoral dissertation, Concordia University).

Thagard, P. (2024). Bots and beasts: What makes machines, animals, and people smart?. MIT Press.

van der Bogert, V. (2024). Starting out: Experiences of new faculty at a teaching university.

Veríssimo, C., Pereira, L., Fernandes, A., & Martinho, R. (2024). Complex problem solving as a source of competitive advantage. *Journal of Open Innovation: Technology, Market, and Complexity*, 10(2), 100258.

Yas, H., Dafri, W., Sarhan, M. I., Albayati, Y., & Shwede, F. (2024). Universities Faculty's Perception of E-learning Tools: Filling the Gaps for Enhanced Effectiveness. In *Artificial Intelligence in Education: The Power and Dangers of ChatGPT in the Classroom* (pp. 573-588). Cham: Springer Nature Switzerland.