Digitalization's Revolutionary Effect on Education and Career Development

Akshat Jain[1], Mohammed Wamique Hisam[2], Imran Azad[3], Amir Ahmad Dar[1,], Mehak Malhotra[1] and Mohammad Shahfaraz Khan[3]*

[1]School of Chemical Engineering and Physical Sciences, Lovely Professional University, Punjab, India
[2]Department of Management, College of Commerce and Business Administration, Dhofar University, Salalah, Oman
[3]College of Economics and Business Administration, Economics and Business Administration Department, University of Technology and Applied Sciences, Salalah, Oman

Abstract: The digital revolution has greatly impacted education, making it more accessible and convenient. Online learning has democratized education, providing learners with a vast range of knowledge. This study examines the advantages of online learning in terms of academic and career growth, considering the influence of location (rural/urban). The research methodology includes statistical analysis and a survey of 110 students in India. The results show that earning certificates online significantly affects both educational and career growth. The study also finds that the impact of online learning is consistent across rural and urban areas. Finally, this paper emphasizes the transformative potential of online education in shaping academic and professional trajectories.

1 Introduction

Companies specializing in educational technology are constantly working to develop cutting-edge solutions to improve access to education for those without sufficient financial support. Social media has undergone substantial development as a teaching tool. Social media is increasingly widely used by both teachers and students as an essential component of their overall e-learning experience. In the context of today, it has developed into a crucial platform for spreading knowledge on significant themes. Social media platforms not only enable information sharing at any time and from any location, but they also provide extraordinary networking opportunities that encourage social engagement and may lead to new job chances [1, 2].

By enabling teachers to customize lessons to meet the individual needs of each student while taking into account their preferred pace, learning style, and interests, digital technologies have transformed education. As a result of this personalization, students can now advance at their own pace and in a way that works best for them. This has greatly increased engagement and efficacy of learning. Additionally, using digital technologies allows teachers to enhance their lessons with simulations, gamification, and virtual reality, which makes learning more engaging and participatory, 65% of teachers use online resources to plan lessons.

Additionally, educators can communicate with students through social media and other online platforms, establishing collaborative learning settings. Students get the chance to interact with peers from different nations and cultures through online courses and group projects. Their viewpoints are broadened, and they develop cross-cultural skills, which are becoming more and more important in our connected worldwide society.

Social well-being, which is directly related to education, is included in sustainable development. Information technology has been a crucial force behind educational reform and the advancement of societal well-being. In 2020, there was a 32.07% increase in the use of digital education platforms worldwide. A transformative era in educational institutions has begun as a result of the introduction of cutting-edge technology-assisted learning tools, such as mobile devices, smartboards, Massive Open Online Courses (MOOCs), tablets, laptops, simulations, dynamic visualizations, and virtual laboratories [3-5].

The Internet of Things (IoT) has become a highly cost-effective way to cultivate young brains through education in this digital age. IoT is an effective tool for ensuring that everyone has access to a top-notch educational experience, regardless of their location or socioeconomic status. UNESCO reports that 101 new national distance learning platforms

*Corresponding author e-mail: sagaramir200@gmail.com

were introduced in various countries in 2020. It highlights the opportunity to democratize education and advance social well-being by granting open access to information and educational possibilities [3-5].

The existence of the digital gap, where students from low-income households may not have access to necessary digital tools and the internet, is one of the main problems caused by the digital revolution. Inequalities in educational possibilities have emerged as a result of this glaring disparity in access to educational resources. In conclusion, the digital age has had a significant impact on education, profoundly altering the dynamics of both teaching and learning.

On the other side, it has enabled tailored learning experiences and vastly increased access to knowledge. Additionally, technology has opened doors for global learning, giving students access to a wider variety of information and viewpoints. The digital divide and the accessibility of digital distractions issues that have arisen as a result of this digital transition need to be carefully handled.

Educators need to adopt new teaching approaches and technology as digital technologies grow and change. In this continuously evolving educational environment, adaptation is crucial to ensuring that students have the most meaningful and successful learning experiences.

When it comes to offering a real-time learning environment, quick assessments, and high levels of student engagement, traditional classroom instruction frequently falls short. Digital learning tools and technology, on the other hand, have evolved to close this gap and offer efficiencies that conventional approaches cannot match. It only makes sense for schools and other educational institutions to make use of the potential of smartphones and other wireless devices by incorporating them into the classroom [6,7].

The versatility and user-friendliness of modern technology do increase the appeal and relevance of learning for the next generation of students. However, the introduction of technology in the classroom could initially be difficult because some traditional educators could be hesitant to use modern gadgets and technology. They can view these gadgets as diversions rather than as useful study aids. However, as technology develops and shows off how beneficial it is for education, more teachers are seeing its potential to improve the learning process and are increasingly incorporating it into their teaching strategies [6, 7].

A digital classroom calendar can be used to display several significant schedules, such as class timetables, assignment due dates, field trips, guest speaker engagements, exam schedules, and semester vacations, providing students with a crucial tool for efficient planning. Furthermore, student response systems, like smartphones and clicker gadgets, provide teachers with a practical way to quickly test their pupils' understanding of the subject delivered and determine whether further explanation is necessary [7, 8].

This research has shown that there is a difference between those who possess certificates and those who do not; secondly, those with more certifications possess some enhanced understanding of the same subject compared to those without. It has been seen that those with some sort of certificate gain more exposure in the field of interest and more career opportunities. The final finding indicates that individuals who learn online and earn certificates will have an equal number of opportunities regardless of whether they live in an urban or rural area. Within this paper, the research methodology employed includes the utilization of the ANOVA test. The findings demonstrated a significant difference between the acquisition of certificates and subsequent educational advancement. For this purpose, the objectives are as follows:

1.1 Objective

1 - To assess the relationship between certificates earned online and educational growth.

2 - Examining the impact of online learning on career growth.

3 - To investigate how the effect of online learning differs between rural and urban areas.

2 Literature Review

The history of online education is a relatively recent but rapidly evolving phenomenon in the broader landscape of education. Its roots can be traced back to the 1960s and 1970s with the advent of computer-assisted instruction (CAI) and computer-based training (CBT) programs, primarily utilized in corporate and military training contexts. However, it wasn't until the 1990s, with the widespread accessibility of the Internet and the development of Learning Management Systems (LMS), that online education truly began to take shape. This era witnessed universities and educational institutions cautiously experimenting with online courses and degree programs. The emergence of the University of Phoenix in 1976 played a pivotal role in popularizing online higher education [9-11].

The turning point came in the mid-2000s with the introduction of MOOCs, offered by platforms like Coursera, edX, and

Udacity. These platforms democratized access to education by providing high-quality courses from esteemed universities at no cost. The subsequent decade noted the integration of online education into mainstream institutions, with universities offering full-fledged online degree programs and the rise of blended learning models. However, it was the COVID-19 pandemic in the early 2020s that catapulted online education to the forefront. With physical campuses shuttered, educational institutions worldwide transitioned to virtual learning, revealing both the potential and the challenges of online education [12, 13].

This history underscores the transformative power of technology in education, making learning more accessible and flexible. Yet, it also raises critical questions about the quality of online education, student engagement, and equitable access to resources. Looking ahead, the future of education seems poised to be a dynamic fusion of online and in-person instruction, leveraging cutting-edge technologies like artificial intelligence, virtual reality, and augmented reality to create more immersive and interactive learning experiences.

Digital learning has several benefits. These include lessening the amount of paper used, saving time, making research easier, and possibly improving sustainability, cost-effectiveness, resource use, and educational accessibility for teachers and students [14]**.** In today's world, technology is ingrained in daily life and has a significant impact on education. The current digital revolution is changing how students learn, to increase access to and affordability of higher education [15].

It is possible that integrating technology into the classroom will increase students' interest in learning. Since today's youth are so accustomed to electronics, incorporating technology into the classroom will surely excite their attention and boost participation. Students can gain from a more engaging educational experience that reduces distractions and keeps them focused by integrating technology into the classroom. Students can find learning engaging and entertaining when sophisticated technical resources like computers, projectors, and other tools are used in the classroom. Incorporating technological resources, oral presentations, and group projects into classroom assignments can also help students learn dynamically and engagingly which goes beyond standard verbal communication [16].

Students become more active participants in the learning process when computers and other devices are integrated with digital tools, putting them at the centre of the process [17]. In this situation, the teacher acts as a mentor and can improve learning outcomes. With so many digital resources at their disposal, students can choose how they want to obtain the knowledge they need or even make their content. Wikis, podcasts, and blogs are examples of Web 2.0 technologies that allow students to create content, work together with classmates, evaluate one another's work, and progress toward co-learning. Digital technology makes it easier to employ instructional practices like flipped classrooms and gamification in the classroom, which enhances the learning process. With the development of technology, learning landscapes—which function as pedagogic instruments that integrate many approaches and provide every student with a personalized path—have changed, elevating the quality and significance of instruction [18].

In this paper, the relationship between certificates earned and educational growth will be evaluated. Then, examines the impact of online learning – specifically, certificates earned – on career growth. After inspecting these aspects, analyze how online learning, particularly certificates earned, differs in rural and urban areas. All these investigations will be done with the help of an ANOVA statistical test.

3 Methodologies

This research is a study of 110 students studying in various fields in India. A Google Form was created for the research (find at the end of references). The form includes 5 questions on educational advancement and another set of 5 questions about career growth. Ratings from 1 to 5 were used to collect responses. Following that, the scores were aggregated by computing the means of the five questions in each set, allowing for simple data analysis. The final dataset includes features such as educational advancement, professional advancement, region, credentials, and gender. Descriptive statistics is the process of collecting, evaluating, and presenting data to characterize its major features. Rather than reaching inferences about a wider population, this field concentrates on delivering a concise summary of the data's primary properties. Mean, median, and mode (central tendency) are examples of descriptive statistics, as are range, variance, and standard deviation (variability). These metrics aid in the discovery of patterns and trends in data, allowing for a better understanding of its key characteristics. Descriptive statistics is widely used to discover and express data insights in many industries, including business, healthcare, and social sciences. The survey instrument was designed to elicit responses on two critical dimensions: educational growth and career development. Within this paper, the research methodology employed included the utilization of the ANOVA test. This statistical analysis was applied to gauge the relationship between certificates earned and the subsequent growth in educational attainment. The findings demonstrated a significant difference between the acquisition of certificates and subsequent educational advancement. Additionally, the impact of online learning on career growth was thoroughly examined. The application of ANOVA tests yielded a significant p-value, indicating a noteworthy positive impact of earning certificates online on educational

advancement.

Furthermore, our findings revealed an interesting pattern: people who obtained online certificates had higher levels of educational growth than those who did not. This finding emphasizes the transformative power of online certification programs in promoting academic advancement. In brief, when comparing educational and career growth, it became evident that online education exerted a more substantial influence on the former. This observation suggests that although online certification holds great potential for educational enrichment, its direct impact on career progression may be subtler.

An examination of demographic factors revealed a consistency in growth opportunities regardless of geographic location (rural or urban). This insight underscores the potential of online education which levels the playing field for people in a variety of settings.

4 Results

This research is a study of 110 students studying in various fields in India. The data for this study was gathered through a structured survey administered. The survey instrument was designed to elicit responses on two critical dimensions: educational growth and career development. As indicated by the data, the descriptive statistics take the following form.

Table 1: Descriptive statistics

Summary	Educational_Growth	Career_Growth
Mean	3.698181818	3.7
Standard Error	0.058090003	0.062409234
Median	3.8	3.8
Mode	4	4
Standard Deviation	0.609253087	0.654553563
Sample Variance	0.371189324	0.428440367
Kurtosis	-0.503386541	0.081148802
Skewness	0.128034582	-0.211116427
Range	2.8	3.2
Minimum	2.2	1.8
Maximum	5	5
Sum	406.8	407
Count	110	110
Confidence Level (95.0%)	0.115132497	0.123693072

The data show people's opinions about their prospects for further education and employment, with a mean rating of approximately 3.7 for each category. The measurements show the accuracy of the sample means with standard error (0.058 for career growth and 0.062 for education growth). Slight departures from a normal distribution are indicated by skewness and kurtosis. Response variability is reflected in the ranges, which are 2.8 for education and 3.2 for career growth. However, the mode for both sets is 4, indicating that the distributions share a common peak. For both categories, intervals around the means are provided by the 95% confidence level. Based on 110 responses, the dataset, as a whole, shows moderately variable opinions that are generally favorable towards both career and educational advancement.

4.1 To assess the relationship between certificates earned online and educational growth

By setting up an ANOVA table regarding the relationship between certification and educational advancement, both the null and alternative hypotheses were rigorously formulated.

Null hypothesis (H$_0$): There is no significant difference in educational growth among different certificate types. In other words, earning certificates online does not affect educational growth.

Alternative hypothesis (H$_1$): There is a significant difference in educational growth among different certificate types. Earning certificates online affects educational growth.

Table 2: ANOVA table of Certificates and Education Growth

Source of Variation	Degree of Freedom	Sum of Square	Mean Sum of Square	F-Value	Pr(>F)
Certificates	1	4.03	4.029	11.95	0.000784
Residuals	108	36.43	0.337		

Interpretation: The ANOVA analysis (Table 2) indicates a noteworthy disparity in educational growth attributed to the acquisition of certificates, whether earned online or through other means. This inference is substantiated by a p-value below the predetermined significance level ($\alpha=0.05$). As a result, the significant impact of online certification attainment on educational progress is confidently confirmed.

Putting these findings within previous research and theoretical frameworks is critical for further elucidation. Numerous studies highlight the growing importance of online education and certification in modern learning contexts. Furthermore, the theoretical framework of social constructivism established by Vygotsky (1978) can be used to explain observed discrepancies. Learning, according to this view, is a social process in which contact with peers and learning materials contributes considerably to knowledge production [19]. Online certification programs frequently include interactive platforms, enabling collaborative learning experiences and supporting social constructivism ideas. The applications are many, allowing institutions and instructors to make use of online certification programs to improve educational results. Recognizing the potential for online certification choices to encourage dynamic and engaging learning environments, governments may consider incorporating them into formal education systems to serve varied learning preferences and requirements [19].

4.2 Examining the impact of online learning on career growth.

An ANOVA Table 2 has been compiled to evaluate the impact of online learning on career advancement. Subsequently, both the null and alternative hypotheses were carefully developed, forming the basis for analytical investigation.

Null hypothesis (H_0): There is no significant difference in career growth among different certificate types. Earning certificates online does not affect career growth.

Alternative hypothesis (H_1): There is a significant difference in career growth among different certificate types. Earning certificates online affects career growth.

Table 3: ANOVA Table for Career Growth

Source of Variation	Degree of Freedom	Sum of Square	Mean Sum of Square	F-Value	Pr(>F)
Certificates	1	4.25	4.253	10.82	0.00135
Residuals	108	42.45	0.393		

Interpretation: The ANOVA analysis (Table 2) reveals a substantial distinction in educational growth associated with the acquisition of certificates, whether obtained through online channels or alternative means. This conclusion is supported by a p-value below the significance level ($\alpha=0.05$). Thus, say with confidence that online certification has a significant impact on academic advancement.

It is critical to position these findings within current literature and theoretical frameworks linked to online education and academic accomplishment to improve their interpretation. Numerous studies regularly show that online certification programs improve educational achievements. Theoretical frameworks like the Technology Acceptance Model (TAM) and the Community of Inquiry (CoI) model help to clarify practical consequences. According to TAM, individuals' aspirations to embrace and use online certification systems, as well as their educational results, are substantially influenced by the perceived ease of use and utility of technology. The CoI model highlights the importance of social presence, cognitive presence, and instructional presence in the online learning environment, which contributes to online certification's favourable influence on academic development. The practical effects are numerous, with institutions and instructors realizing the importance of implementing online certification programs into their offerings, which contribute considerably to students' academic advancement. Employers may also take into account the importance of online certificates when evaluating candidates, recognizing the practical benefits these certifications provide to people's skill sets and knowledge bases [20].

4.3 To investigate how the effect of online learning differs between rural and urban areas.

To examine how the impact of online learning differs in rural and urban environments, an ANOVA table was assembled. It involves an interaction effect between Certificates and area (Rural/Urban) on Educational Growth and Career Growth. The null and alternative hypotheses were carefully constructed as a result, providing a foundation for analytical investigation.

4.3.1 Interaction effect between Certificates and area (Rural/Urban) on Educational Growth

Null hypothesis (H_0): There is no significant difference in educational growth between individuals from rural and urban areas. The location (rural or urban) does not affect educational growth.

Alternative hypothesis (H_1): There is a significant difference in educational growth between individuals from rural and

urban areas. The location (rural or urban) affects educational growth.

Table 4: ANOVA Table of Certificates, Area, and Educational Growth

Source of Variation	Degree of Freedom	Sum of Square	Mean Sum of Square	F-Value	Pr(>F)
Certificates	1	4.03	4.029	11.882	0.000811
Area	1	0.14	0.144	0.424	0.516268
Residuals	107	36.29	0.339		

Interpretation: In the conducted ANOVA test (Table 3), the calculated p-value for the urban and rural area comparison exceeds the chosen significance level ($\alpha=0.05$). This outcome indicates a lack of statistically significant disparity in educational growth between individuals hailing from urban and rural locales. As a result, it is concluded that the area of residence, whether urban or rural, has no apparent impact on educational advancement.

The lack of a statistically significant difference in educational attainment suggests that people in both urban and rural locations have equal access to educational resources and opportunities. This conclusion is consistent with the notion of equal educational opportunity, which advocates for a learning environment that is fair regardless of geographical location. Policymakers may use these findings to develop education strategies that target both urban and rural communities. Rather than focusing on geographic differences, policy efforts might be directed at mitigating other possible variables impacting educational results, such as socioeconomic status, teacher quality, and curricular relevance. While the general comparison may not disclose a substantial difference, it is critical to recognize the individuality of each community. Delivering localized treatments that are suited to the distinct requirements and problems of urban and rural communities is still beneficial, highlighting the need to identify subtleties within each environment. The non-significant finding may motivate more studies into additional variables or factors influencing educational advancement, such as the role of community participation, parental involvement, or cultural influences in molding educational outcomes in both urban and rural contexts [21-24].

4.3.2 Interaction Effect between Certificates and Area (Rural/Urban) on Career Growth

Null hypothesis (H_0): There is no significant difference in career growth between individuals from rural and urban areas. The location (rural or urban) does not affect career growth.

Alternative hypothesis (H_1): There is a significant difference in career growth between individuals from rural and urban areas. The location (rural or urban) affects career growth.

Table 5: ANOVA Table of Certificates, Area, and Career Growth

Source of Variation	Degree of Freedom	Sum of Square	Mean Sum of Square	F-Value	Pr(>F)
Certificates	1	4.25	4.253	10.779	0.00139
Area	1	0.23	0.227	0.575	0.44990
Residuals	107	36.43	0.337		

Interpretation: In the ANOVA test (Table 4) conducted, the computed p-value for the urban and rural area comparison surpasses the significance level ($\alpha=0.05$). This result indicates the absence of statistically meaningful differences in career development between individuals living in urban and rural environments. Therefore, it is estimated that geographical location, whether urban or rural, has no significant impact on career progression.

One practical conclusion emerges, showing that an individual's residency in either urban or rural settings may not have a substantial impact on job chances. According to Human Capital Theory, which holds that education and skill development are essential elements in professional success [25], the lack of major variations in career growth can be ascribed to comparable educational possibilities between urban and rural locations. Another interpretation contends that individuals in both locations receive comparable amounts of community support and networking opportunities, which is consistent with Social Capital Theory, which emphasizes the importance of social connections and networks in job progression [26]. The lack of significant differences in career development may also be related to the growing importance of work-life balance, as evidenced by Greenhaus and Powell's (2006) research, which found that people in both urban and rural areas value aspects other than career success, prioritizing a balanced lifestyle [25-27].

5 Discussions

Education has been deeply impacted by the digital revolution, making it more accessible globally. The purpose of this research was to investigate the benefits of online learning, with an emphasis on its impact on academic and professional success, and to examine how geography (rural/urban) impacts this connection. The study, which used ANOVA testing

on 110 students in India, discovered a significant positive link between online certification achievement and career growth. Certificates were shown to have a significant relationship with both educational (p=0.000784) and professional advancement (p=0.00135) progress. The study also discovered no significant interaction impact between certifications and region (p=0.516268 for educational progress; p=0.44990 for career growth), suggesting that the advantages of online learning are comparable throughout rural and urban locations. This demonstrates online education's transformational potential, overcoming geographical divisions to provide learners worldwide with possibilities for progress. Finally, the study stresses digital education's immense impact on academic and professional paths, placing online learning as an important motivator for both educational and career growth.

The findings are consistent with a growing body of literature stressing the benefits of online learning for both educational and professional growth. Allen and Seaman (2017) found that online education is becoming more popular, showing its efficacy and transformational potential, which supports the current study's emphasis on its role in educational advancement [28]. Furthermore, the study is consistent with the Human Capital Theory, which holds that education is an investment in human capital that increases productivity and earning potential [25]. This study supports the premise that online education helps the accumulation of human capital by finding a substantial positive link between online certification completion and career growth, which aligns with wider theoretical frameworks. The absence of major variations between rural and urban locations follows Chetty et al. (2014) findings, suggesting that physical location may not be the only predictor of educational and professional trajectory [29]. This viewpoint adds to the study's claim that online learning may bridge geographical boundaries. Furthermore, the positive relationship between online certification completion and educational advancement is consistent with Tinto's (1975) Student Integration Model, which emphasizes the significance of academic and social integration in encouraging student success [30]. Online education enhances students' absorption into educational processes by giving flexibility and accessibility, adding to their overall growth and success. Finally, the study's findings are consistent with previous research on online learning, emphasizing its beneficial influence on educational and professional development and developing a thorough grasp of the transformational potential of digital education [26, 28-30].

Several contextual considerations might explain the lack of substantial variations in the impact of online learning between rural and urban settings. For starters, infrastructure improvements in rural areas may have reduced conventional educational hurdles. According to a World Bank study (2019), significant efforts have been undertaken to improve rural digital infrastructure, lessening the urban-rural digital gap and giving rural students with more dependable access to online learning platforms. Furthermore, as emphasized by research published in the International Journal of Educational Development [31], social transformations and shifting views toward digital education may lead to a more even educational field. This changing mindset might influence students in both rural and urban areas similarly, aligning their educational experiences. Additionally, economic factors could be at play, as the cost-effectiveness of online learning may appeal equally to students in rural and urban settings, with the popularity of MOOCs and affordable online certifications potentially mitigating financial constraints that often disproportionately affect rural areas [32]. In conclusion, the lack of significant differences between rural and urban areas in the impact of online learning may be attributed to improved infrastructure, shifting societal attitudes, and the cost-effectiveness of digital education, collectively contributing to a more equitable educational experience transcending geographical boundaries [31-33].

6 Conclusions

Finally, this study addressed three key objectives to fully comprehend the dynamics of online certification. First, it investigated the association between online certifications and educational advancement, demonstrating a statistically significant influence backed by a significant p-value from the ANOVA test. Second, the study looked at the impact of online learning on professional advancement, emphasizing that the benefits of gaining credentials go beyond academic areas. Importantly, this study exceeded its primary aims by discovering that the influence of online education on academic achievement outweighs its effect on professional success. Furthermore, the study addressed the urban-rural gap, suggesting that online certification may operate as a powerful equalizer. Learners receive exposure and possibilities for personal development regardless of their location. The findings highlight the vast potential of digital education to transcend geographical divides and improve personal growth globally. In conclusion, this study emphasizes the powerful role of online certification in both education and career advancement, confirming the positive influence of digital education on academic paths and emphasizing its potential to break down geographical barriers and provide opportunities for learners worldwide. The robustness of these conclusions is strengthened by a careful examination of ANOVA model assumptions and diagnostic tools, which ensures the validity of the study's findings.

Conflicts of Interest Statement

The authors declare that there is no conflict regarding the publication of this paper.

References

[1] Haddad, W. D., &Draxler, A, (2002). The dynamics of technologies for education. *Technologies for education: Potentials, parameters, and prospects*, 2.

[2] Büyükbaykal, C. I, (2015). Communication technologies and education in the information age. *Procedia-Social and Behavioral Sciences*, *174*, 636-640.

[3] Keengwe, J., & Bhargava, M, (2014). Mobile learning and integration of mobile technologies in education. *Education and Information Technologies*, *19*, 737-746.

[4] Dreimane, S., &Upenieks, R, (2020). Intersection of serious games and learning motivation for medical education: A literature review. *International Journal of Smart Education and Urban Society (IJSEUS)*, *11*(3), 42-51.

[5] Rogers, P. L, (2000). Barriers to adopting emerging technologies in education. *Journal of educational computing research*, *22*(4), 455-472.

[6] Cavas, B., Cavas, P., Karaoglan, B., &Kisla, T, (2009). A Study on Science Teachers' Attitudes Toward Information and Communications Technologies in Education. *Online Submission*, *8*(2).

[7] Biletska, I. O., Paladieva, A. F., Avchinnikova, H. D., & Kazak, Y. Y, (2021). The use of modern technologies by foreign language teachers: developing digital skills. *Linguistics and Culture Review*, *5*(S2), 16-27.

[8] Kim, S. H., Holmes, K., &Mims, C, (2005). Opening a dialogue on the new technologies in education. *TechTrends*, *49*(3).

[9] Clark, R. E, (1983). Reconsidering research on learning from media. *Review of educational research*, *53*(4), 445-459.

[10] Kulik, C. L. C., &Kulik, J. A, (1991). Effectiveness of computer-based instruction: An updated analysis. *Computers in human behavior*, *7*(1-2), 75-94.

[11] Bates, T, (2000). *Managing technological change: Strategies for college and university leaders*. Jossey-Bass: San Francisco.

[12] Qazi, J., Naseer, K., Qazi, A., AlSalman, H., Naseem, U., Yang, S., ... &Gumaei, A, (2020).Evolution to Online Education around the globe during a SARS-CoV-2 Coronavirus (COVID-19) Pandemic: Do develop and underdeveloped cope alike?.

[13] Wong, J., Baars, M., Davis, D., Van Der Zee, T., Houben, G. J., & Paas, F, (2019). Supporting self-regulated learning in online learning environments and MOOCs: A systematic review. *International Journal of Human–Computer Interaction*, *35*(4-5), 356-373.

[14] Beardsley, M., Albó, L., Aragón, P., & Hernández-Leo, D, (2021). Emergency education effects on teacher abilities and motivation to use digital technologies. *British Journal of Educational Technology*, *52*(4), 1455-1477.

[15] Qureshi, M. I., Khan, N., Raza, H., Imran, A., & Ismail, F, (2021). Digital technologies in education 4.0. Does it enhance the effectiveness of learning? .

[16] Lopez-Fernandez, O, (2021). Emerging health and education issues related to internet technologies and addictive problems. *International Journal of Environmental Research and Public Health*, *18*(1), 321.

[17] Osadchyi, V. V., Valko, N. V., &Kuzmich, L. V., (2021). Using augmented reality technologies for STEM education organization. In *Journal of Physics: Conference Series* (Vol. 1840, No. 1, p. 012027).

[18] Kumar, A., Agrawal, R., Wankhede, V. A., Sharma, M., & Mulat-Weldemeskel, E, (2022). A framework for assessing social acceptability of industry 4.0 technologies for the development of digital manufacturing. *Technological Forecasting and Social Change*, *174*, 121217.

[19] Vygotsky, L. S., & Cole, M, (1978). *Mind in society: Development of higher psychological processes*. Harvard university press.

[20] Anderson, T., Liam, R., Garrison, D. R., & Archer, W, (2001). Assessing teaching presence in a computer conferencing context.

[21] Darling-Hammond, L, ()2010. *The flat world and education: How America's commitment to equity will determine our future*. Teachers College Press.

[22] Hanushek, E. A., & Rivkin, S. G, (2010). Generalizations about using value-added measures of teacher quality. *American economic review*, *100*(2), 267-271.

[23] Coleman, J. S, (1968). Equality of educational opportunity. *Integrated education*, *6*(5), 19-28.

[24] Epstein, J. L, (2018). *School, family, and community partnerships: Preparing educators and improving schools*. Routledge.

[25] Becker, G. S, (2009). *Human capital: A theoretical and empirical analysis, with special reference to education*. University of Chicago press.

[26] Burt, R. S, (2009). The contingent value of social capital. In *Knowledge and social capital* (pp. 255-286). Routledge.

[27] Greenhaus, J. H., & Powell, G. N, (2006). When work and family are allies: A theory of work-family enrichment. *Academy of management review*, *31*(1), 72-92 (2006).

[28] Allen, I. E., & Seaman, J, (2017). Digital Compass Learning: Distance Education Enrollment Report 2017. *Babson survey research group*.

[29] Chetty, R., Hendren, N., Kline, P., &Saez, E, (2014). Where is the land of opportunity? The geography of intergenerational mobility in the United States. *The Quarterly Journal of Economics*, *129*(4), 1553-1623.

[30] Tinto, V, (1975). Dropout from higher education: A theoretical synthesis of recent research. *Review of educational research*, *45*(1), 89-125.

[31] Boelens, R., Voet, M., & De Wever, B, (2018). The design of blended learning in response to student diversity in higher education: Instructors' views and use of differentiated instruction in blended learning. *Computers & Education*, *120*, 197-212.

[32] Liyanagunawardena, T. R., Adams, A. A., & Williams, S. A, (2013). MOOCs: A systematic study of the published literature 2008-2012. *International Review of Research in Open and Distributed Learning*, *14*(3), 202-227.

[33] Stromquist, N. P, (2019). World Development Report 2019: The changing nature of work: By the World Bank. Washington, DC, World Bank.

https://docs.google.com/forms/d/e/1FAIpQLSdSEYdz_kc6dXqQvv74U8cQzz3DC8r6zcWv_emg6cefIWF-Ag/viewform?usp=s f_link