Enriching UNESCO's Life Skills Through Educational Technology Interventions: Analysis of Interpersonal Life Skills of Distance Learners

Muhammad Shakeel Chaudhary[1], Adnan Ghuffar[2] and Naila Naseer[3]

https://doi.org/10.62345/jads.2025.14.1.99

Abstract

Educational technology has a great revolution in all the fields of education. In the field of distance education, educational technology plays a vital role by providing new and cost-effective platforms to make the teaching-learning process efficient, reaching and developing life skills among learners. UNESCO categorized life skills into main three areas cognitive, interpersonal, and intrapersonal skills. In the present study interpersonal skills were focused which aimed to examine UNESCO's life skills' development through educational technology interventions, particularly in the context of interpersonal life skills of distance learners of Allama Iqbal Open University (AIOU). The population of the study was B. Ed 4 Years students of which 70 students were randomly selected. Research design was quantitative followed by a survey method. Self-developed research tool was administered, and data was analysed in terms of descriptive statistics. The findings suggest that distance learners using educational technology show strong interpersonal life skills in all the sub-constructs including communication skills, cooperation, conflict resolution, teamwork, respect for others, emotional understanding, problem-solving, and active listening. Comparisons indicated no gender difference indicating that educational technology effectively fosters interpersonal life skills among all distance learners. There was no significant difference in interpersonal life skills based on respondents' computer literacy levels, job status, and income levels. It is concluded that educational technology intervention develops interpersonal life skills among distance learners. The study recommends that educational technology interventions may be used in all forms of education to enhance the interpersonal life skills of the learners.

Keywords: Distance Education; Interpersonal Life Skills; Intervention; Educational Technology

Introduction

The World Health Organization WHO (2025) defines life skills "as a wide variety of qualities that help people overcome daily challenges. This spectrum includes communication, interpersonal skills, critical thinking, problem-solving, and emotional control. Life skills are holistic and essential for personal and social progress. Life skills go beyond academic knowledge, emphasizing the need for a holistic educational strategy that prepares students for 21st-century

[1]*MPhil Scholar, Distance, Non-Formal and Continuing Education Department, Allama Iqbal Open University Islamabad. Email: muhammadshakeelchaudhary359@gmail.com*

[2]*MPhil Scholar, Distance, Non-Formal and Continuing Education Department, Allama Iqbal Open University Islamabad. Email: adnanghaffar9@gmail.com*

[3]*Assistant Professor, Distance, Non-Formal and Continuing Education Department, Allama Iqbal Open University Islamabad. Corresponding Author Email: naila.naseer@aiou.edu.pk*

Compliance with ethical standards: There are no conflicts of interest (financial or non-financial). This study did not receive any funding.

challenges (Chukkali, 2023). Evidence shows that life skills education improves mental health, well-being, and academic accomplishment. Life skills, particularly emotional intelligence and resilience improve student mental health (Hasrat, 2024). According to (Chukkali, 2023) "managing stress, solving problems, and building solid relationships all contribute to a welcoming and inclusive classroom". Research also shows that life skills education reduces risk factors such as academic stress and social pressures, reducing student mental health issues (Hasrat, 2024). Life skills are necessary for holistic development that includes cognitive emotional and social aspects. Life skills are a category of soft skills that are needed to successfully navigate the challenges of daily life both personal and professional. They include the ability to set and achieve goals, make decisions, solve problems and effectively manage one's time. Once mastered, life skills help a person in every aspect of his/her life (Chakara & Lavanya, 2024).

Interpersonal skills are defined by the Oxford English Dictionary as "the skills that a person to interact effectively with others. The ability to communicate, work with others, understand different perspectives, and manage relationships in constructive and positive manners. Interpersonal skills refer to the social skills that enable individuals to interact and work harmoniously with others in both personal and professional life". Good interpersonal skills tend to be able to work well in a group or team and with other people. They communicate effectively with friends, families, colleagues, customers, or clients. Therefore, interpersonal skills are vital in all areas of life at work education, and society. Skills refer to the abilities or competencies that an individual possesses, which enable them to perform specific tasks or carry out certain activities effectively. These can be acquired through education, training, and experience.

Education plays a crucial role in the growth and development of the learners. Students, as learners, are the primary beneficiaries of education. Education provides students with the opportunity to develop their cognitive, social, emotional, and physical abilities, as well as to acquire knowledge and skills that will prepare them for future careers and life challenges (Parul, 2023). Good education, formal, informal, and non-formal education that prioritizes the noble values of the goals of education itself, namely producing people who are skilled and have good character in creating a prosperous and prosperous nation (Mulyadi et al., 2020).

Distance education has had a remarkable effect on the landscape of education since its advent in the 19th century as correspondence study. It has taken various shapes and utilized a wide variety of technologies ranging from postal technologies in the 19th century to virtual reality today. Open and Distance Learning has gained a new breath with the turn of the 21st century with more and more courses delivered through distance education models worldwide. The impact of the new media, particularly digital connective technologies to deliver courses from a distance has triggered a new interest in open and distance learning opportunities including the advent of Open Education Resources (OER) and Massive Online Open Courses (MOOCs) that attempt to provide learning access to a wider audience (Saykılı, 2018).

Life skills refer to a wide range of capabilities that enable individuals to traverse daily life difficulties effectively. According to Andreas Schleicher, "skills have become the global currency of the 21st century, but this currency can depreciate if it is not used the group of psychological competencies and interpersonal skills that helps the individual to make informed decisions, communicate effectively and develop coping and self-management skills to a healthy and productive life are called life skills". In this technological and competitive world, the performance of an individual is measured not just based on grades but also based on certain other skills and aptitudes. Interpersonal skills are one of the most important and effective skills of the 21st century. In our social, family, professional, and workplace for interaction purposes, we have required

interpersonal skills. According to Aristotle, man is a social animal, for effective socialization in the technological era, mastering interpersonal skills will help individuals develop leadership qualities and interact with others. All life skills are acquired through, education, training, and experience. Any mode of education formal, informal, and distance & non-formal plays a crucial role in the growth and development of life skills. Technology has changed most of human life, the mode of education, and life skills. In a globalized world distance & non-formal education play a crucial role. For interaction in a globalized world, 21st-century skills especially interpersonal skills have a vital role. Revolution in technology has changed and increased 21st-century skills. These skills can be developed through distance & non-formal education. In developing countries like Pakistan where 22 million children are out of school and their literacy rate is 62.8%, Expenditure on education is 1.5% of GDP and 62% of the population resides in rural areas, most learners get education through distance mode of education.

Distance and non-formal education provide a second chance for those learners or individuals who have not completed their education through formal education. Most distance & non-formal education is provided through technical resources, educational technology also plays a vital role in distance & non-formal education and the development of life skills in an individual. The new trend in distance and non-formal education is technological innovation, the use of the latest software, and teaching methods. The rapid change in technology and methods in distance & non-formal education has also changed, so all the new concepts, teaching and learning methods, the latest styles, and new technologies to promote the teaching process and life skills through distance & non-formal education. Educational technology is a unique investment in distance & non-formal education to develop present and future life skills. In this sense, the present study examined the intervention of educational technology to promote life skills (interpersonal skills) through distance and non-formal education in Pakistan.

Literature Review

The WHO defines life skills as "the abilities for adaptive and positive behaviour that enable individuals to deal effectively with the demands and challenges of everyday life". A person who is "adaptive" has a flexible mindset and can change their behaviour depending on the situation Singh & Alodaynan (2023) Life skills can be defined (Shi, 2017) as "an individual's ability to effectively manage the demands and challenges of various situations in their daily life". The goal is to increase life skills and "the abilities people can learn that will assist them to succeed in living a productive and satisfying life" overall. According to Miller, the "development of life skills necessary to perform leadership functions in real life" is self-assessed and organization-specific. According to his research, life skills are the key components and indications for the development of youth leadership life skills. The WHO has outlined ten essential life skills. These abilities are all connected and complement one another (Singh & Alodaynan, 2023).

The 21st-century talents, according to Munteanu are a "collection of competencies that students must master to survive in the information society. Three categories of skills are suggested by the Partnership for 21st-century Skills (P21) (2015)" (Ekizer & Yildirim, 2023) including life and career skills, learning and innovation skills, and information, media, and technology skills. While information, media, and technology skills include information literacy, media literacy, and ICT literacy, life and career skills encompass flexibility and adaptability, initiative and self-direction, social and cross-cultural skills, productivity and accountability, leadership, and responsibility. Learning and innovation skills cover the 4Cs, or Creativity and innovation, Critical thinking and problem-solving, Communication, and Collaboration, according to Partnership for the 21st

Century (Ekizer & Yildirim, 2023). According to (Ledward, 2011) "21st century skills are a blend of content knowledge, specific skills, expertise, and literacies necessary to succeed in work and life" These skills go beyond mere technological literacy and include proficiency in critical thinking, problem solving, communication, and teamwork.

Through the mastery of these skills, people gain the ability to access, synthesize, and communicate information; work collaboratively across differences to solve complex problems; and create new knowledge through the innovative use of multiple technologies, thus allowing them to thrive in the new environment" (Ekizer & Yildirim, 2023). The method of delivering education to students who are not physically present in a traditional classroom setting is referred to as distance education. It has gained relevance due to its ability to overcome geographical barriers and provide flexible learning options. Historically, distance education began with correspondence courses in the 19th century and has evolved significantly through digital technologies and the advent of the internet, which have transformed how educational content is delivered and consumed (Rakhmetov et al., 2024).

The application of many forms of technological know-how in the classroom is called educational technology. It includes the computer hardware, the programs they run, and the theories and methods used in teaching. With the advancement of new technologies, our working, playing, making things, living habits, and sharing information are constantly evolving. So, it should come as no shocking that advancement in educational technologies is generating novel possibilities for the distance education sector (Singh & Alodaynan, 2023).

Technological advances bring new opportunities for stimulating and challenging learners' minds in the field of education, in the 21st century number of people are Intrigued and using adaptive technologies such as gamification, high-tech collaboration tools, blogging, podcasting, 3D printing, artificial intelligence (AI), virtual reality (VR), and adaptive learning (He, 2019; Steele, 2020). The learning tools' uniqueness of educational technology is that they enable learners to interact with scenarios of the real world Also, additionally, books and other sources cannot provide students with the learning outcomes of simulation and visualization. As a result, using educational technology attracts in as it keeps learners engaged. Additionally, using educational technology in the classroom can help learners develop their self-expression and cognitive abilities (Singh & Alodaynan, 2023). Technology's contribution to remote learning commonly referred to as distance learning or distance education has been innovative and essential in changing the nature of education. Technology has changed, the way education is provided and received in several important forms, including allowing educational institutions to teach students who live far away from traditional classrooms. Self-paced learning modules, simulations, multimedia case studies, video tutorials, communications, and evaluation tools are examples of digital learning technologies that can expand the range of learning opportunities available for adult learners and teachers (Patra, 2024).

While literature review extensive studies have highlighted the importance of life skills and how these skills can develop in the individual. The literature reviews have also addressed the role of education and educational technology in the development of life skills. The literature review provides a solid reason for research, while the literature review identifies different gaps, these provide a concrete reason for our research study. The literature reviews encourage us and support us in investigating our research problem.

Problem Statement

More and more people are realizing the value of transmitting personal skills beyond the basic requirements of academic knowledge in the rapidly evolving world of technology and skills. You need a set of skills that are life skills which include the ability to work with others, think critically, communicate clearly, and be flexible in the 21st century. The world is changing quickly, and life skills are very necessary for success. The revolution in technology has changed the mode of distance, non-formal education, and life skills. In the technological era life skills have a very effective role especially interpersonal skills for interaction purposes. To make distance & non-formal education more effective, accessible, and sustainable, educational technology has vital contributions. These skills can be developed through distance & non-formal education. The interpersonal skills are very important, keeping in view, that this study aimed to examine UNESCO's life skills through educational technology interventions: analysis of interpersonal life skills of distance learners.

Significance and Rationale

In developing countries like Pakistan where rural and marginalized communities often face challenges in accessing formal education, Distance Education bridges the gap. The integration of educational technology in distance education in Pakistan has the potential to transform how life skills are taught and learned by improving access affordability, encouragement, and personalized learning, educational technology can help individuals develop life skills such as cognitive, interpersonal, and intrapersonal. These skills are very important for the holistic development of the person. With the proper use of technology and according to the needs of the learners in distance and non-formal education, these skills can be promoted. Educational technology enhances the life skills (interpersonal skills) of the learners, so this study will be important for policy policymakers' government, teachers, learners, and all stockholders of non-formal education.

The development of life skills is the main goal of distance education which cannot be covered or missed out by formal education. The term "life skills" refers to the capacity to adapt to a variety of people and deal with life's challenges, which can vary based on the environment and society in which a person lives (Permana, 2021). These skills are essential for enhancing cognitive abilities in social, professional, and personal environments. They are generally regarded as essential skills that individuals should learn and adopt to enhance their personal development and well-being. Life skills as the behavior one employs to successfully navigate life's obstacles and mastering them is essential to success (Ningsih, 2023). The best way for underprivileged, marginalized, depressed, and vulnerable communities to receive an education is through distance education. Technology has evolved and impacted every walk of life including the distance education sector. With the integration of technology, the distance education sector, learners, and teaching reshaped. The basic objective of distance education is to create a skillful person. In the present era of technology, we must use technology in distance education to promote life skills. The objective of the future study is to explore the integration of educational technology to promote life skills through distance education.

Objectives and Research Questions

- To investigate the educational technology intervention to promote life skills focusing on interpersonal life skills' development among distance learners.

The following research questions were made to achieve the objective:

RQ1: What is the role of educational technology in the development of life skills (Interpersonal skills) focusing on communication, empathy, conflict resolution, and cooperation skills through distance and non-formal education?
RQ2: To what extent does educational technology intervention promote life skills (Interpersonal skills) focusing on teamwork, respect for others, and problem-solving through distance & non-formal education?
RQ3: What is role of educational technology on the development of interpersonal life skills, focusing on emotional understanding, active listening and tolerance skills through distance & non-formal education?

Methodology

We used a quantitative research design followed by a survey method to examine the educational technology interventions to promote life skills, particularly focusing on the interpersonal skills of randomly selected 70 distance learners. A self-developed questionnaire was designed to gather information. This tool had two parts. Part A comprised demographic information of participants; whereas Part B comprised 10 items with response categories ranging from strongly agree to strongly disagree. The maximum score of an individual on this scale was 50 and the minimum was 10. The tool was developed in the English language. This tool was administered through Google Docs and sent through e-mails and WhatsApp. The response rate was 57 out of 70 participants. The following sub-constructs of interpersonal life skills were included in the tool:

Table 1: Interpersonal Life skills

Construct	Sub-Constructs
Interpersonal Life skills	Communication Conflict resolution Empathy cooperation Teamwork respect for others problem solving emotional understanding Active listening . Tolerance skills

Data was analyzed in terms of one-sample t-test and independent sample t-test.

Results

Table 2: Analysis of Interpersonal Skills of Respondents

	t-value	p-value	Mean Difference	Range	
				Min	Max
Communication	23.547	.000	1.561	1.43	1.69
Conflict resolution	20.462	.000	1.895	1.71	2.08
Empathy	17.448	.000	1.842	1.63	2.05
Cooperation skill	16.860	.000	1.754	1.55	1.96
Teamwork	15.158	.000	1.825	1.58	2.07
Respect for others	17.004	.000	2.175	1.92	2.43
Problem solving	17.305	.000	1.719	1.52	1.92
Emotional understanding	16.374	.000	1.807	1.59	2.03
Active listening	18.547	.000	1.754	1.56	1.94
Tolerance	17.960	.000	1.842	1.64	2.05

Table 2 represents sub-construct wise analysis of each item score. This indicates that in all sub-construct items indicate that respondents possess interpersonal life skills which include communications skills (t-value 23.547and p-value .000), conflict resolution skills (t-value 20.462 and p-value .000), cooperation skills (t-value 17.448 and p-value .000), teamwork (t-value 16.860 and p-value .000), respect for others (t-value 17.004 and p-value .000), problem solving (t-value 17.305 and p-value .000),emotional understanding (t-value 16.374 and p-value .000), active listening (t-value 18.547 and p-value .000), and Tolerance (t-value 17.960 and p-value .000). So, it is concluded that distance learners who use educational technology posses' ample amount of interpersonal life skills.

Table 3: Gender Differences in terms of Interpersonal Skills

	Gender	N	Mean	S.D	Std. Error Mean	t-value	p-value
Communic	male	44	1.61	.493	.074	1.464	.982
ation	female	13	1.38	.506	.140		
Conflict	male	44	1.89	.689	.104	-.165	.756
resolution	female	13	1.92	.760	.211		
Empathy	male	44	1.82	.815	.123	-.414	.124
	female	13	1.92	.760	.211		
Cooperatio	male	44	1.77	.803	.121	.322	.831
n skill	female	13	1.69	.751	.208		
Teamwork	male	44	1.95	.963	.145	2.042	.128
	female	13	1.38	.506	.140		
Respect	male	44	2.20	1.002	.151	.415	.204
for others	female	13	2.08	.862	.239		
Problem	male	44	1.68	.708	.107	-.691	.654
solving	female	13	1.85	.899	.249		
Emotional	male	44	1.75	.751	.113	-.950	.992
Skills	female	13	2.00	1.080	.300		
Active	male	44	1.73	.694	.105	-.524	.490
listening	female	13	1.85	.801	.222		
Tolerance	male	44	1.89	.813	.123	.791	.647
	female	13	1.69	.630	.175		
total	male	44	18.2955	4.14044	.62419	.402	.713
	female	13	17.7692	4.14636	1.14999		

Table 3 elaborates the results of independent samples t-test which shows that there is no statistically significant difference between male and female respondents' interpersonal life skills as in sub-constructs of life skills p-value is greater than 0.05 level of significance. So, it is concluded that there is no significant difference between two groups' scores, so, they possess equal level of interpersonal skills (communication skills, conflict resolution, empathy, cooperation skill, teamwork, respect for others, problem solving, emotional skills, active listening, tolerance).

Table 4: Area wise Differences in terms of Interpersonal Skills

	Area	N	Mean	S.D	Std. Error Mean	t-value	p-value
Communication	rural	30	1.63	.490	.089	1.147	.176
	urban	27	1.48	.509	.098		
Conflict resolution	rural	30	1.93	.740	.135	.436	.643
	urban	27	1.85	.662	.127		
Empathy	rural	30	1.83	.699	.128	-.087	.293
	urban	27	1.85	.907	.175		
Cooperation skill	rural	30	1.70	.794	.145	-.547	.924
	urban	27	1.81	.786	.151		
Teamwork	rural	30	1.93	.868	.159	.952	.289
	urban	27	1.70	.953	.183		
Respect for others	rural	30	2.30	1.088	.199	1.027	.006
	urban	27	2.04	.808	.155		
Problem solving	rural	30	1.83	.834	.152	1.215	.731
	urban	27	1.59	.636	.122		
Emotional Skills	rural	30	1.87	.776	.142	.566	.586
	urban	27	1.74	.903	.174		
Active listening	rural	30	1.87	.819	.150	1.258	.246
	urban	27	1.63	.565	.109		
Tolerance	rural	30	1.93	.828	.151	.937	.744
	urban	27	1.74	.712	.137		
total	rural	30	18.8333	4.32382	.78942	1.281	.425
	urban	27	17.4444	3.80620	.73250		

Table 4 explains the results of independent samples t-test which shows that there is no statistically significant difference between respondents' interpersonal life skills (Communication skills, Conflict resolution, Empathy, Cooperation skill, Teamwork, Respect for others, Problem solving, Emotional Skills, Active listening, Tolerance) in terms of their marital status, as in all sub-constructs of life skills except Respect for others, p-value is greater than 0.05 level of significance. So, it is concluded that overall, there is no significant difference between two groups' scores (t-value=1.281 and p-value<0.05) however, in respect for others, there is statistically significant difference between rural respondents than urban as mean score of rural respondents 2.30 is higher than urban respondents' mean score (p>0.05). so, only in this construct rural respondents have high level of respect for others than rural respondents.

Table 5: Differences of Interpersonal Skills (Computer Literate versus Computer non-literate)

	Computer literate	N	Mean	Std. Deviation	Std. Error Mean	t-value	p-value
Communication	yes	54	1.56	.502	.068	-.371	.212
	no	3	1.67	.577	.333		
Conflict resolution	yes	54	1.91	.708	.096	.577	.726
	no	3	1.67	.577	.333		
Empathy	yes	54	1.85	.810	.110	.389	.526
	no	3	1.67	.577	.333		

Cooperation skill	yes	54	1.74	.782	.106	-.553	.974
	no	3	2.00	1.000	.577		
Teamwork	yes	54	1.85	.920	.125	.961	.390
	no	3	1.33	.577	.333		
Respect for others	yes	54	2.17	.966	.132	-.289	.700
	no	3	2.33	1.155	.667		
Problem solving	yes	54	1.70	.743	.101	-.663	.797
	no	3	2.00	1.000	.577		
Emotional Skills	yes	54	1.80	.833	.113	-.409	.885
	no	3	2.00	1.000	.577		
Active listening	yes	54	1.74	.705	.096	-.609	.709
	no	3	2.00	1.000	.577		
Tolerance	yes	54	1.83	.795	.108	-.360	.036
	no	3	2.00	.000	.000		
total	yes	54	18.1481	4.18175	.56906	-.211	.469
	no	3	18.6667	3.05505	1.76383		

Table 5 tells the results of independent samples t-test which shows that there is no statistically significant difference between respondents' interpersonal life skills in terms of their computer literacy levels, as in all sub-constructs of life skills except tolerance, p-value is greater than 0.05 level of significance. So, it is concluded that overall, there is no significant difference between two groups' scores (t-value=-.211, p-value<0.05) so, all respondents have equal level of interpersonal skills except tolerance (p value.036> 0.05).

Table 6: Differences of Interpersonal Skills (Job status wise difference)

	Job status	N	Mean	Std. Deviation	Std. Error Mean	t-value	p-value
Communication	employed	44	1.57	.501	.076	.186	.752
	unemployed	13	1.54	.519	.144		
Conflict resolution	employed	44	1.93	.661	.100	.734	.089
	unemployed	13	1.77	.832	.231		
Empathy	employed	44	1.91	.741	.112	1.171	.181
	unemployed	13	1.62	.961	.266		
Cooperation skill	employed	44	1.73	.758	.114	-.476	.239
	unemployed	13	1.85	.899	.249		
Teamwork	employed	44	1.86	.905	.136	.594	.824
	unemployed	13	1.69	.947	.263		
Respect for others	employed	44	2.18	.971	.146	.091	.639
	unemployed	13	2.15	.987	.274		
Problem solving	employed	44	1.61	.689	.104	-2.009	.965
	unemployed	13	2.08	.862	.239		
Emotional Skills	employed	44	1.89	.895	.135	1.332	.392
	unemployed	13	1.54	.519	.144		
Active listening	employed	44	1.77	.711	.107	.354	.555
	unemployed	13	1.69	.751	.208		
Tolerance	employed	44	1.86	.824	.124	.383	.322
	unemployed	13	1.77	.599	.166		
total	employed	44	18.3182	3.96949	.59842	.479	.549
	unemployed	13	17.6923	4.69724	1.30278		

Table 6 explains the results of independent samples t-test which shows that there is no statistically significant difference between respondents' interpersonal life skills in terms of their job status, as in all sub-constructs of life skills, p-value is greater than 0.05 level of significance. So, it is concluded that overall, there is no significant difference between two groups' scores (t-value= .479, p-value>0.05).

Table 7: Differences of Interpersonal Skills (Income level wise difference)

	Income level	N	Mean	Std. Deviation	Std. Error Mean	t-value	p-value
Communication	low	13	1.38	.506	.140	-1.353	.842
	middle	40	1.60	.496	.078		
Conflict resolution	low	13	1.92	.862	.239	.214	.103
	middle	40	1.88	.648	.102		
Empathy	low	13	1.54	.776	.215	-1.528	.522
	middle	40	1.93	.797	.126		
Cooperation skill	low	13	1.69	.855	.237	-.625	.303
	middle	40	1.85	.770	.122		
Teamwork	low	13	1.77	1.092	.303	-.354	.478
	middle	40	1.88	.883	.140		
Respect for others	low	13	2.23	1.092	.303	.173	.540
	middle	40	2.18	.984	.156		
Problem solving	low	13	1.69	.630	.175	-.136	.554
	middle	40	1.73	.784	.124		
Emotional Skills	low	13	1.77	1.092	.303	-.208	.465
	middle	40	1.83	.747	.118		
Active listening	low	13	1.31	.480	.133	-2.531	.314
	middle	40	1.88	.757	.120		
Tolerance	low	13	1.54	.660	.183	-1.506	.804
	middle	40	1.90	.778	.123		
total	low	13	16.8462	4.31753	1.19747	-1.315	.652
	middle	40	18.6250	4.21041	.66572		

Table 7 explains the results of independent samples t-test which shows that there is no statistically significant difference between respondents' interpersonal life skills in terms of their income levels, as in all sub-constructs of life skills, p-value is greater than 0.05 level of significance. So, it is concluded that overall, there is no significant difference between two groups' scores (t-value= -.1.315, p-value<0.05).

Findings and Discussion

Our study indicated that educational technology intervention enhanced learners' interpersonal life skills i.e. communication skills, cooperation, conflict resolution, teamwork, respect for others, emotional understanding, problem solving, active listening and tolerance (Table 2). Consistent with these findings (Ekizer & Yildirim, 2023) indicated powerful role of educational technology to foster interpersonal life skills and suggesting life skills.

Regarding gender differences, no statistically significant difference between male and female respondents indicated that both genders exhibit equal levels of interpersonal lifeskills through

educational technology interventions (Table 3). Livingstone (2016) also reported similar findings indicating different digital learning platforms make education interactive for both genders thus allowing equal opportunities for learning engagement. However, some recent literature (Abid, 2022) reported contrary findings indicating gender differences in provision of interpersonal skills through technology embedded instruction. Therefore, in life skills Joshi (2024) also found no significant gender difference.

Life skills development is important for everyone for healthy life relationships irrespective of the area where they live to cope with life stresses and related events. Keeping in view, this study compared the phenomenon of rural and urban students' interpersonal life skills. Findings suggested statistically no significant difference between interpersonal life skills of rural versus urban students suggesting that both gained ample amount of life skills through technology embedded instructions. However, a deviation was found in the sub-construct of "respect for others," where rural respondents scored significantly higher than urban respondents (mean score: 2.30). This implies that cultural or environmental factors may influence the development of certain interpersonal skills, particularly respect for others. (Table 4). These findings are supported by Joshi (2024) in which findings showed overall no significant difference in rural and urban students' life skills however, in self-awareness and empathy significant difference was found.

This study compared interpersonal life skills based on respondents' computer literacy levels which indicated no significant difference. However, in sub-construct of "tolerance," statistically significant difference was observed (Table 5). This indicates that respondents with higher computer literacy might have lower tolerance levels, possibly because of various levels of access to digital interactions and communication methods.

Our analysis indicated no significance difference between interpersonal skills of employed and unemployed learners (Table 6), which is second by the work of Tang (2018). His study indicated that structured learning environment promote interpersonal skills i.e. teamwork, communication etc. rather than job experience.

The results suggest that income levels do not significantly impact interpersonal life skills (Table 7). It indicates that distance learners in different income groups show similar levels of interpersonal life skills, reinforcing the idea that educational technology provides equitable access to skill development. The findings are aligned with the previous research conducted by James and Heckman (2020) that indicates education and structured learning environments play more significant role in developing interpersonal life skills than socioeconomic status or income level. In another study Pachauri and Kumar (2024) showed that students from higher socioeconomic status exhibit better Life skills than those students who come from lower socioeconomic status. The findings point out the transformative role of educational technology in fostering interpersonal life skills and different demographic factors, such as gender and job status. Distance education ensures that learners develop necessary communication, problem solving and teamwork skills by providing equal opportunities for learning regardless of their background. As technology provides modern education, its integration into distance education is also very important as it enables individuals with interpersonal skills, needed for both personal and the professional growth.

Conclusion and Recommendations

Findings of the study concluded the positive impact of educational technology on the interpersonal skills among distance learners. The study highlights the important role of educational technology in fostering interpersonal skills among distance learners and different demographic factors such as gender, marital status, job status, income level. The study suggested that technology increase

learning environment and provides equal access to skill development like communication, teamwork, problem solving and emotional understanding. Technology's integration into distance education is very important for further enhancing life skills development. To expand the benefits of educational technology, institutions should focus on technology tools for creating interactive learning experience. Based on the findings from this study, the study recommended that:

1. To enhance the interpersonal skills of the learners through distance education, educational technology may be used.
2. For the development of 21st century skills through distance education, educational technology may be used.
3. Teachers may use educational technology to enhance life skills of the learners through distance education.
4. Easy and accessible approach for learners to educational technology in distance education may be provided by respective distance and online institutes
5. Government may provide funds and resources in distance for the use of technology.
6. Distance educational institutions may focus on utilization of educational technology in distance education.
7. For the holistic development of the learners through distance education, educational technology may be adapted.
8. Teachers of the distance education may adapt and improve their educational technology skills as per changing needs of the century.

References

- Chakra, D. A., & Lavanya, D. K. (2024). Life skills: The 21st century skills. *International Journal for Multidisciplinary Research*, *6*(4), 1-4. https://www.ijfmr.com/papers/2024/4/24402.pdf
- Chukkali, J. S. (2023). Effects of a mindfulness-based intervention on wellbeing among rural adolescents with academic anxiety. *Journal of Indian Association for Child and Adolescent Mental Health, 19(4),*, 385-393.
- Ekizer, F. N., & Yildirim, S. S. (2023). 21st Century Skills and Learning Environments: ELT Students' Perceptions. *Educational Research and Reviews, 18*(6), 114-128.
- Hasrat, M. A. (2024). Embedding 21st-century life skills in the curriculum: Analysis of elementary level curriculum for the teaching of life skills. *Journal of Excellence in Social Sciences, 3*(3), 71-83.
- He, P. (2019). Artificial intelligence in higher education: New wine in old wineskins. *Journal of Educational Technology Systems, 48*(1), 5-13.
- James J., & Heckman, T. K. (2012). Hard evidence on soft skills. *Labour Economics, 19(*4), 451-464.
- Joshi, G. (2024). Practicing life skills: a comparative study of rural and urban secondary school. *IPE Journal of Management, 14*(20), 101-114.
- Ledward, B. C. (2011). An overview of 21st century skills. Summary of 21st century skills for students and teachers, by pacific policy research center. *Honolulu Kamehameha Schools–Research & Evaluation, 20*, 51-57.
- Livingstone, S. &.-G. (2016). *The class: Living and learning in the digital age.* New York: New York University Press.

- Mulyadi, D. S., Suryadi, S., & Aliyyah, R. (2020). Life skills education program: Is it beneficial for the society? *Journal of Nonformal Education,*, 101-107. Doi: 10.15294/jne.v6i2.24456
- Ningsih, T. M. (2023). Life Skill Educational Management Model for The Social Skills of Children with Special Needs. *International Journal of Nursing and Midwifery Science (IJNMS), 7(3),*, 274-279.
- Parul, M. H. (2023). Life Skill Education: A Paradigm Shift in Education to Accelerate Holistic Development. *Educational Quest: An Int. J. of Education and Applied Social Sciences*, 13-7.
- Patra, J. D. (2024). Role of technology in distance education. *Scholarly Research Journal for Humanity Science & English Language*, 1-5.
- Permana, J. P. (2021, February 12). *Comparative analysis of the implementation of life skill education management in students with disability between public special school and private special schools.* 10.2991/assehr.k.210212.087
- Pachauri, N. C., & Kumar, A. (2024). Students' life skills with reference to the socio-economic status and discipline of the study in the context of NEP-2020. *Indian Journal of Science and Technology, 17*(36), 3781-3786. Doi:10.17485/IJST/v17i36.2169
- Rakhmetov, M. B. (2024). Improving the training on creating a distance learning platform in higher education: evaluating their results. *Front. Educ., 9, 1372002,* , 1-9.
- Rakhmetov, M., Kuanbayeva, B., Saltanova, G., Zhusupkalieva, G., Abdykerimova, E. (2024). Improving the training on creating a distance learning platform in higher education: evaluating their results. *Front. Educ, 9,* https://doi.org/10.3389/feduc.2024.1372002
- Saykılı, A. (2018). Distance education: Definitions, generations, key concepts and future directions. *International Journal of Contemporary Educational Research, 5(1)*, 2-17.
- Shi, H. L. (2017). The research of preschool inclusive education classes for staff in the field of health and body movement and professional development requirements. *Natl Pingtung Uni Dept Phys Educ,3,*15-29.
- Singh, H. P., & Alodaynan , A. M. M. (2023). The role of educational technology in developing the cognitive and communicative skills of university students: A Saudi Arabian case. *International Journal of Advanced and Applied Sciences*, *10*(7), 1-8. https://science-gate.com/IJAAS/Articles/2023/2023-10-07/1021833ijaas202307017.pdf
- Steele P, B. C. (2020). Ethical considerations in designing virtual and augmented reality products-Virtual and augmented reality design with students in mind: Designers' perceptions. *Journal of Educational Technology Systems, 49(2)*, 219-238.
- Tang, K. N. (2018). The importance of soft skills acquisition by teachers in higher education institutions. *Kasetsart Journal of Social Sciences*, *41*(1), 22–27. https://so04.tci-thaijo.org/index.php/kjss/article/view/229129