

EDUCATIONAL TECHNOLOGY AND ACQUISITION OF SOCIAL-EMOTIONAL SKILLS AMONG UNIVERSITY STUDENTS IN NIGER STATE

BY

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Abstract

The study investigated the influence of educational technology and acquisition of social-emotional skills among University Students in Niger State. The study was guided by two research questions and null hypotheses. This study adopted a descriptive research design. The target population for this research was undergraduate students in the public universities located in Niger State with a total population of 380,877 undergraduate students. A sample of 400 undergraduate students from the four public universities in Niger state was used for the study. The sample size was determined using Taro Yamane's formula (1967) and multistage and convenience sampling techniques were adopted for study. The instrument used was Educational Technology and Acquisition of Social-Emotional Skills Questionnaire (ETASESQ). The instrument was validated by experts and trail-tested for reliability which indicated a reliability coefficient of 0.87. Data were analyzed using mean and standard deviation to answer research questions while Dependent t-test was used to test null hypotheses at a 0.05 level of significance. The results showed that there is a significant influence of availability and utilization of educational technologies on acquisition of social-emotional skills among University Students in Niger State. Based on this finding it was concluded and recommended among other that schools should ensure that students have access to a range of educational technologies, including computers, laptops, tablets, and interactive whiteboards to projectors, audio-visual aids, and educational software among others.

Keywords: Educational Technology, Availability, Utilization and Social-Emotional Skills

Introduction

The term “socio-emotional” (sometimes written as social-emotional) was not coined by one author. However, it gained traction in research through the CASEL framework (Collaborative for Academic, Social, and Emotional Learning) in the 1990s, which standardized “Social and Emotional Learning (SEL)” as a field. According to Kristel and Rocio (2020), to synthesize, social and emotional development refers to the cognitive and emotional skills that a person can learn and develop to behave in ways that benefit themselves and others, to achieve positive outcomes in their health, personal relationships (family, friends, neighbours, peers, etc.), and academic and occupational endeavours, and to contribute in a significant way to society. In short, it is growth in

self-awareness, self-management, social awareness, relationship skills, and responsible decision-making.

Social-Emotional Development (SED) skills refer to the set of competencies that enable individuals to understand and manage emotions, build positive relationships, make responsible decisions, and cope effectively with challenges. According to the Collaborative for Academic, Social, and Emotional Learning (CASEL, 2023), these skills are organized into five interrelated domains: self-awareness, self-management, social awareness, relationship skills, and responsible decision-making. Self-awareness involves recognizing one's emotions, strengths, and values, while self-management emphasizes regulating emotions and behaviour to achieve personal and academic goals. Social awareness focuses on understanding others' perspectives and showing empathy and respect for diversity. Relationship skills enable individuals to establish and maintain healthy, supportive interactions, whereas responsible decision-making entails making ethical and constructive choices that consider the well-being of oneself and others. Together, these competencies provide a foundation for emotional intelligence, academic achievement, and lifelong well-being. Research has shown that fostering SED skills contributes to improved academic performance, prosocial behaviour, and reduced emotional distress among students (Durlak, Weissberg, Dymnicki, Taylor, and Schellinger, 2011).

Socio-emotional development primarily begins as an internal process that benefits the self before it extends to others. It involves understanding and managing one's own emotions, developing self-awareness, building confidence, and learning self-regulation. As individuals grow in these areas, they become better equipped to form healthy relationships, empathize with others, communicate effectively, and navigate social contexts. In essence, socio-emotional development lays the foundation for personal well-being first, which then enables meaningful social interaction and positive contributions to one's community and relationships.

To develop socio-emotional development (SED) skills - such as self-awareness, self-management, social awareness, relationship skills, and responsible decision-making -certain underlying qualities are essential. These include empathy, which allows individuals to understand and share others' feelings; emotional intelligence, which supports recognizing and regulating one's own emotions; and resilience, which helps in coping with challenges effectively. Additionally, effective communication, critical thinking, and self-discipline play vital roles in fostering these competencies. Together, these qualities build a foundation for healthy interactions, positive behaviour, and adaptive coping strategies across social and academic settings (CASEL, 2023; Durlak et al., 2021).

In the same vein, socio-emotional development has various importance which ranges from self to the society, those around them. Social and emotional development leads to better physical and mental health, reduces stress, and helps people handle life challenges. Children who learn self-control and emotional skills grow up to have better health, fewer mental health problems, lower crime rates, and greater financial stability (Weissberg et al., 2015; Jones et al., 2017; Harvard Center on the Developing Child, 2016). Developing social and emotional skills yields both short- and long-term benefits. With good social and emotional development, people can achieve better outcomes in health, academic undertakings, employment, entrepreneurship, and relationships at

family, community, and society levels. A large study by Durlak et al. (2011) showed that Social and Emotional Learning (SEL) programs help students improve their emotions, relationships, behaviour, and even academic performance. When children learn to understand and manage their emotions, they tend to do better in school, develop their talents, earn more as adults, and become responsible and caring citizens (Tough, 2012). One early example is the Perry Preschool Project (1960s), which provided quality preschool education for children from low-income families. Although their IQ scores improved only for a short time, their social and emotional skills led to lifelong benefits: they were more likely to graduate, get stable jobs, earn good income, and stay out of trouble (Tough, 2012). Later studies found that strong social-emotional skills are linked to better careers, higher income, job stability, and productivity (Jones et al., 2017). In school, students with good social and emotional skills have better attitudes toward learning, improved grades, fewer behaviour issues, lower dropout rates, and higher chances of college success (Johnson and Wiener, 2017; Jones et al., 2017).

Research also shows that emotions are essential for learning, students learn better when they can focus, manage stress, and work well with others. Without emotional development, effective learning cannot happen (Garcia and Weiss, 2016; Immordino-Yang, 2016). Programs like 4Rs (Reading, Writing, Respect and Resolution) have proven this. The 4Rs program teaches empathy, problem-solving, and cooperation, leading to better reading and math scores, fewer behavioural issues, and improved classroom environments (Jones et al., 2017).

In terms of influence, socio-emotional development can be influenced by various factors such as relationships with people and the environment in which an individual grows. Family dynamics, peer interactions, cultural background, and educational experiences all play crucial roles in shaping socio-emotional growth. Additionally, exposure to supportive relationships, positive role models, and emotionally responsive environments fosters trust, empathy, and self-confidence. On the other hand, negative experiences such as neglect, conflict, or isolation can hinder healthy socio-emotional development. Therefore, the quality of one's relationships and surroundings significantly determine how well an individual learns to understand emotions, manage behaviour, and build meaningful connections with others. It also exemplifies the nature–nurture principle, emphasizing that both innate traits (nature) and environmental influences (nurture) interact to shape one's socio-emotional development. New advances in neurobiology are revealing that brain development and the learning it enables are directly dependent on social-emotional experience Immordino-Yang et al (2019). And of course, having brain development aids learning which in turn leads to academic success. Where then does technology comes in?

Traditionally, socio-emotional development, happens via the above factors. The world is being run by technology and has become an essential aspect of our lives. One must look at its influence in areas of human development, specifically, socio-emotional development. It extends, enhances, and structures how social-emotional experiences can occur- especially in digital or hybrid learning environments. Given that social-emotional development strongly influences learning outcomes, it becomes necessary to explore how technology- especially in educational contexts- can support or enhance this developmental process.

Technology refers to the knowledge, tools, and techniques humans use to solve problems, fulfil needs, and achieve goals by applying scientific knowledge. It encompasses both tangible items, like smartphones and computers, and intangible aspects, such as processes, skills, and organized information. Technology is a broad field with diverse applications, from medical and educational technologies to communication and industrial systems, and its evolution is based on combining existing components and addressing human purposes. Technology is a tool that a parent, educator or caregiver can use to complement and extend the learning experience – especially given the host of emerging technologies that go beyond traditional screens, World Economic Forum (2016). Technology holds enormous promise to help foster 21st century skills, including social and emotional skills. It can personalize learning, engage the disengaged, complement what happens in the classroom, extend education outside the classroom and provide access to learning to students who otherwise might not have sufficient educational opportunities World Economic Forum (2016).

Educational technology is broadly divided into two components: technology in education and technology of education. *Technology in education* refers to the use of machines, gadgets, and instructional tools- such as computers, audio-visual aids, and other media- to enhance teaching and learning; this is often called the hardware approach. In contrast, *technology of education* focuses on applying educational theories, psychological principles, and systematic methods - known as the software or systems approach - to solve educational problems, plan instruction, and improve learning processes. In essence, while one emphasizes tools and equipment, the other emphasizes methodology and strategy. However, for this research, the focus is on technology in education, which would centre on how technological tools and media influences socio-emotional development. NOU (n.d.). These technological tools range from computers, laptops, tablets, and interactive whiteboards to projectors, audio-visual aids, and educational software such as Duolingo, Kahoot, and Canva for Education. More advanced technologies like Virtual Reality (VR) and Augmented Reality (AR) provide immersive learning environments, while Learning Management Systems (LMS) such as Google Classroom and Moodle facilitate online instruction and collaboration. Additionally, assistive technologies, like text-to-speech software and Braille displays, support inclusive education, and Artificial Intelligence (AI) tools offer personalized learning by adapting content to students' needs. Together, these technologies form the “hardware” aspect of educational technology, focusing on the practical use of digital tools to improve learning outcomes. This study aims to explore how educational technologies contribute to students' social-emotional development (SED). By examining tools such as ClassDojo, Seesaw, and virtual learning environments like Google Expeditions and Minecraft: Education Edition, the research highlights how digital platforms can foster empathy, collaboration, self-regulation, and emotional intelligence. These competencies not only improve classroom engagement but also enhance students' overall academic performance and well-being.

Statement of the Problem

To thrive in the 21st century, students need more than traditional academic learning. They must be adept at collaboration, communication and problem-solving, which are some of the skills developed through social and emotional learning (SEL). Coupled with mastery of traditional skills,

social and emotional proficiency will equip students to succeed in the swiftly evolving digital economy. World Economic Forum (2016). Educators have seen these need and have implemented them. Although educational technology (EdTech) has been increasingly incorporated into tertiary education settings to enhance learning outcomes, evidence indicates that many university students still demonstrate limited social-emotional competencies. Recent studies have shown that undergraduates exhibit declining levels of emotional regulation, self-awareness, and interpersonal skills despite the growing presence of digital learning tools (Cerezo, 2024). For instance, findings from *Declines in Social-Emotional Skills in College Students During the COVID-19 Pandemic* reveal that first-year students scored significantly lower emotional control and expressivity compared to pre-pandemic cohorts (PubMed, 2024). Similarly, *University Students' Socio-Emotional Skills: The Role of the Teaching and Learning Environment* highlights that students' socio-emotional development largely depends on the quality of teaching, learning environment, and opportunities for active engagement, many of which are not guaranteed by technology alone (Tandfonline, 2024).

This suggests a pressing need to examine how effectively educational technologies foster social-emotional development and whether such development subsequently influences academic success. While technology offers interactive and collaborative opportunities for learning, its real impact on emotional intelligence, empathy, and interpersonal competence remains underexplored. Understanding this relationship is critical to ensuring that EdTech not only supports cognitive achievement but also nurtures holistic human development, a balance necessary for personal well-being and long-term academic growth.

Purpose of the Study

The purpose of the study was to investigate the influence of educational technology and acquisition of social-emotional skills among University Students in Niger State. Specifically, the study sought to:

1. Determine the influence of availability of educational technologies on the acquisition of social-emotional skills among university students in Niger State.
2. Determine the influence of utilization of educational technologies on the acquisition of social-emotional skills among university students in Niger State.

Research Questions

The following research questions were stated to guide the study:

1. What is the influence of availability of educational technologies on the acquisition of social-emotional skills among university students in Niger State?
2. What is the influence of utilization of educational technologies on the acquisition of social-emotional skills among university students in Niger State?

Research Hypotheses

The following null hypotheses were formulated to guide this study and tested at 0.05 level of significance.

- H₀₁:** There is no significant influence of availability of educational technologies on the acquisition of social-emotional skills among university students in Niger State.
- H₀₂:** There is no significant influence of utilization of educational technologies on the acquisition of social-emotional skills among university students in Niger State.

Research Method

This study adopted a descriptive research design. The study was conducted in Niger State, Nigeria. The target population for this research was undergraduate students in the public universities located in Niger State. These universities include Federal University of Technology, Minna (FUT Minna); Ibrahim Badamasi Babangida University, Lapai (IBBUL); AbdulKadir Kure University, Minna (AKUM); and Niger State University of Education, Minna with a total population of 380,877 undergraduate students. A sample of 400 undergraduate students from the four public universities in Niger state was used for the study. The sample size was determined using Taro Yamane's formula (1967) and multistage and convenience sampling techniques were adopted for study. In the first stage, the research focused in Niger state. In the second stage, four public universities in Niger state were selected. These universities include Federal University of Technology, Minna (FUT Minna); Ibrahim Badamasi Babangida University, Lapai (IBBUL); AbdulKadir Kure University, Minna (AKUM); and Niger State University of Education, Minna. Finally, the sample size of 400 undergraduate students was determined from the four universities by using convenience sampling. By employing this multistage and convenience sampling approach, the research managed to obtain a diverse and representative sample of undergraduate students from each public university in the Niger State. The instrument used was Educational Technology and Acquisition of Social-Emotional Skills Questionnaire (ETASESQ).

The ETASESQ was designed to assess the availability and utilisation of educational technology and its influence on the acquisition of social-emotional skills. The questionnaire comprised sections that evaluate the availability of educational technology resources, such as computers, laptops, tablets, interactive whiteboards to projectors, audio-visual aids, and educational software such as Duolingo, Kahoot, and Canva for Education. More advanced technologies like Virtual Reality (VR) and Augmented Reality (AR) provide immersive learning environments, while Learning Management Systems (LMS) such as Google Classroom and Moodle facilitate online instruction and collaboration. Additionally, assistive technologies, like text-to-speech software and Braille displays, support inclusive education, and Artificial Intelligence (AI), as well as the frequency and purpose of their utilisation by students. Additionally, it assessed the acquisition of social-emotional skills, including self-awareness, self-regulation, empathy, and social skills with a total of 20 items. The Items were rated on a four-point rating scale of 1-Not available, 2- Limited availability, 3- Moderately available, 4-Fully available. 1 (Never) - 2 (Rarely) - 3 (Sometimes) - 4 (Always) as well as 1 (Strongly Disagree) - 2 (Disagree) - 3 (Agree) - 4 (Strongly Agree) The instrument was validated by experts and trail-tested for reliability which indicated a reliability coefficient of 0.87. Administration of the questionnaire was done via online survey (institutional LMS or Google Forms) and paper-based alternatives where internet access was limited. Data were analyzed using mean and standard deviation to answer research questions while Dependent t-test was used to test null hypotheses at a 0.05 level of significance.

Results

Research Question One

What is the influence of availability of educational technologies on the acquisition of social-emotional skills among university students in Niger State?

Table 1: Mean and Standard Deviation on the Influence of Availability of Educational Technologies on the Acquisition of Social-Emotional Skills among University Students

Variables	n	Mean	SD	Decision
Availability of Educational Technologies	400	10.24	2.22	Moderate level of Influence
Acquisition of Social-Emotional Skills		25.75	4.21	

The result in Table 4.1 revealed that availability of educational technologies has a relatively moderate level of influence on acquisition of social-emotional skills among university students in Niger State. The mean score for availability of educational technologies is 10.24, with a standard deviation of 2.22, indicating a moderate level of availability of educational technologies. The mean score for acquisition of social-emotional skills among university students is 25.75, with a standard deviation of 4.21, indicating a slightly more positive acquisition of social-emotional skills among university students in Niger State.

Research Question Two

What is the influence of utilization of educational technologies on the acquisition of social-emotional skills among university students in Niger State?

Table 2: Mean and Standard Deviation on the influence of utilization of educational technologies on the acquisition of social-emotional skills among university students

Variables	n	Mean	SD	Decision
Utilization of Educational Technologies	400	12.10	3.24	Moderate level of Influence
Acquisition of Social-Emotional Skills		25.75	4.21	

The result in Table 2 revealed that utilization of educational technologies has a relatively moderate level of influence on acquisition of social-emotional skills. The mean score for utilization of educational technologies is 12.10, with a standard deviation of 3.24, indicating a moderate level of utilization of educational technologies. The mean score for students' acquisition of social-emotional skills is 25.75, with a standard deviation of 4.21, indicating a slightly more positive students' acquisition of social-emotional skills.

H₀₁:

There is no significant influence of availability of educational technologies on the acquisition of social-emotional skills among university students in Niger State.

Table 3: Summary Dependent T-Test on the Significant Influence of Availability of Educational Technologies on the Acquisition of Social-Emotional Skills among University Students

Variables	n	Mean	SD	df	t-cal.	p-value	Decision
Availability of Educational Technologies	400	10.24	2.22	399	58.203	0.001	Reject
Acquisition of Social-Emotional Skills		25.75	4.21				

The result in Table 3 showed that t- cal of 58.203 with an associated probability value of 0.001 was obtained with regards to the significant influence of availability of educational technologies on the acquisition of social-emotional skills among university students in Niger State. Since the associated probability of 0.000 was less than 0.05, the null hypothesis one was rejected. This implies that there is a significant influence of availability of educational technologies on the acquisition of social-emotional skills among university students in Niger State.

H₀₂:

There is no significant influence of utilization of educational technologies on the acquisition of social-emotional skills among university students in Niger State.

Table 4.7: Summary Dependent T-Test on the Significant Influence of Utilization of Educational Technologies on the Acquisition of Social-Emotional Skills among University Students

Variables	n	Mean	SD	df	t-cal.	p-value	Decision
Utilization of Educational Technologies	319	10.24	2.22	399	55.978	0.001	Reject H ₀₂
Acquisition of Social-Emotional Skills		25.75	4.21				

The result in Table 4 showed that t- cal of 55.978 with an associated probability value of 0.001 was obtained with regards to the significant influence of educational technologies on the acquisition of social-emotional skills among university students in Niger State. Since the associated probability of 0.000 was less than 0.05, the null hypothesis two was rejected. This implies that educational technologies significantly influence acquisition of social-emotional skills among university students in Niger State.

Discussion of Findings

The summary of analysis of hypothesis one revealed a significant influence of availability of educational technologies on the acquisition of social-emotional skills among university students

in Niger State. This finding is true as a result of the rejection of the null hypothesis. This finding is in agreement with earlier finding of Kovalik and Kuo (2022) who investigated the effectiveness of a technology-mediated SEL intervention using digital storytelling and multimedia journaling among middle school students. The study found significant increases in self-awareness and empathy after eight weeks of guided technology use. Students also reported stronger motivation and better collaboration during group projects. The authors concluded that educational technology, when designed with reflective and emotional components, can effectively enhance SED and indirectly improve academic performance.

The result revealed that utilisation of educational technologies significantly influence acquisition of social-emotional skills among university students in Niger State. This is so because the p-value was less than the level of significance leading to the rejection of null hypothesis. This finding is in tandem with Yang, Lee, and Jang (2018) who conducted an experimental study with 150 university students using a blended learning environment integrated with emotion recognition software and collaborative tools. Results revealed that students exposed to emotionally intelligent technology showed improved emotional regulation, teamwork, and academic satisfaction compared to the control group. The study emphasized that emotionally responsive technologies enhance learning quality by simultaneously developing cognitive and affective competencies.

Conclusion

Based on the findings of this study, it was concluded that the study underscores the crucial role of educational technology in enhancing students' acquisition of social-emotional skills in Niger State. The significant influence of availability and utilization of educational technologies, such as computers, laptops, tablets, interactive whiteboards to projectors, audio-visual aids, and educational software such as Duolingo, Kahoot, and Canva for Education. More advanced technologies like Virtual Reality (VR) and Augmented Reality (AR) provide immersive learning environments, while Learning Management Systems (LMS) such as Google Classroom and Moodle facilitate online instruction and collaboration. Additionally, assistive technologies, like text-to-speech software and Braille displays, support inclusive education, and Artificial Intelligence (AI) on students' acquisition of social-emotional skills highlights the need for tertiary institutions to effectively integrate these technologies into lesson delivery. By doing so, schools can create engaging and interactive learning experiences that cater to diverse learning styles, ultimately leading to improved student social-emotional skills and academic achievement.

Recommendations

Based on the conclusion of this study that the following recommendations were made:

1. Schools should ensure that students have access to a range of educational technologies, including computers, laptops, tablets, and interactive whiteboards to projectors, audio-visual aids, and educational software among others
2. Students should be exposed to technical-know-how on educational technologies in order to enhance students' effective utilization.

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