
**SWOT ANALYSIS OF PROMOTING INTERCULTURAL
UNDERSTANDING IN SOCIAL STUDIES CLASSROOMS
THROUGH ARTIFICIAL INTELLIGENCE**

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Abstract

This study examined the place of Artificial Intelligence (AI) in promoting intercultural understanding within Social Studies classrooms in the Oshimili South Local Government Area of Delta State, Nigeria. Precisely, it explores the views, opportunities, and difficulties that confronts Social Studies teachers, with the goal of identifying how AI can promote cultural consciousness and inclusivity in an educational setting. Descriptive research design was employed for the study anchored by four research questions raised to guide the study. One hundred Social Studies teachers selected through a stratified random sampling technique from two hundred and fifty teachers across the thirteen public secondary schools in both urban and semi-urban settings of Oshimili South constituted the study's sample while a structured questionnaire, titled Teachers' Perception and Experiences regarding the use of AI in Promoting Intercultural Understanding in the Social Studies Classrooms (TPEAPIUSSCQ), was used for data gathering, with validation carried out by research experts and a reliability coefficient of 0.82 obtained through the use of Cronbach Alpha analysis. Findings revealed that teachers have a positive perception about the use of AI in enhancing students'

intercultural awareness though significant challenges abound such as limited resources, inadequate professional development and non-compliance from school authorities. The study recommends that professional development for teachers should be given priority, more opportunities to access AI technologies should be created, and collaboration among educators, students, and technology experts should be encouraged as this will position AI as a relevant tool for enhancing cultural understanding and equipping learners for the peculiarities of a globalized world.

Keywords: *Artificial Intelligence, Artificial technologies, Cultural competence, Intercultural understanding, Teacher perception*

Introduction

The average classroom in most countries today is multi-cultural in nature and this requires meeting up with global standards for promoting intercultural understanding and acquisition of basic cultural peculiarities that define communities in any comprehensive educational system. The multi-disciplinary nature of Social Studies according to Vasquez et al., (2021) makes it a subject that is central to this purpose of equipping students with the requisite knowledge necessary for developing cultural awareness and empathy skills related to understanding diverse cultural views.

In the same vein, several studies have reported that Artificial Intelligence (AI) has made remarkable improvements in the field of education that can integrate culturally inclined content and learning experiences used to foster learner's understanding of cultural differences. For instance, Kumar and Mehta (2022) reported that AI-enabled technologies such as virtual and augmented reality, language interpretation technologies and flexible learning platforms have emerged as learning tools transforming the teaching-learning process and making it reflect current global trends in multi-cultural settings. Okeke and Udo (2022), also reported that most of the remarkable changes

experienced in the field of education over the years, involved the use of Artificial Intelligence.

Brynjolfsson and McAfee (2018) however noted, with reference to the educational sector, that the use of AI is categorized into major areas of individualized learning, data-centric administration processes and intelligent learning platforms. In consonance, Heffernan et al., (2019) reported that learning assessment instruments, engaging learning platforms and machine learning which are all AI driven are commonly used by Social Studies teachers in classroom instructions.

The capacity of learners to be able to recognize, value and engage with persons from diverse cultural backgrounds in a multi-cultural setting has been described by Ahmed et al. (2021) as intercultural understanding. Vygotsky's Social Development and Constructivism theories which are hinged on social and interactive contexts in instructional processes support Ahmed's description. Furthermore, AI-driven technologies that promotes intercultural understanding guides learners in developing required skills like cultural empathy (Jang, 2019), promotes access to a wider range of local and globalized cultural content (Krauss, 2021) and engagement with diverse cultural related learning activities (Adebayo & Eze, 2020).

The application of AI therefore promotes the introduction of pedagogical transformations that improves educational quality especially in the semi-urban and urban areas where traditional teaching procedures are largely applied (Heffernan et al., 2019). These outcomes according to Vasquez et al., (2021) makes it possible to conveniently align teaching methods to meet with individual learning needs.

No doubt, AI has great potentials in revolutionizing the education sector, Roberts et al. (2021) however reported that merging it with Social Studies instructions is fraught with many obstacles such as limited access to relevant educational resources, teacher preparation and technology competence. Furthermore, the successful usage of AI-enhanced resources in classroom instruction goes beyond provision of important tools; it

encompasses teacher professional development and institutional support as noted further by Roberts et al. (2021).

Garcia and Lopez (2020), in a study conducted to examine the use of AI-driven resources to promote cultural competence in Social Studies classrooms found that the experimental group performed better in their display of cultural understanding. The researchers employed a quasi-experimental design and ensured that all the steps involved in the design in line with cultural learning applications were followed. Pre-test and post-test evaluation were ensured to determine students' knowledge and understanding of intercultural issues before and after exposure to the treatment.

Additionally, Okeke and Udo (2022), using a qualitative research design and collecting data through interviews and focus group discussions found that teachers identified AI as being highly capable of fostering cultural awareness. However, absence of teacher professional development, lack of infrastructural facilities for teaching and AI technologies being predominantly English language oriented, limited effectiveness particularly in semi-urban regions. This reflects the need for considering local content AI and teacher professional development.

Ahmed et al. (2021) with reference to Social Studies education using mixed-methods research design, gathered data by administering survey instruments to two hundred secondary school teachers across five regions in the UK and thereafter conducted a semi-structured interview with 30 teachers, revealed that most teachers were supportive of the use of AI-driven resources to facilitate understanding of global cultures among students. However, the study also maintained that there were several weighty challenges, including insufficient training for teachers on AI usage and the inequality in access to AI-driven resources in schools with lesser financial resources.

It therefore appears as highlighted in several studies that AI-driven resources can greatly improve student intercultural understanding by facilitating individualized learning situations that address varieties of cultural backgrounds. Although these studies have focused on the general efficacy of AI, the aspect of

addressing educational requirements in remote areas have been largely over-looked. This research therefore examines the role AI plays in promoting intercultural understanding among secondary school students in Oshimili South LGA, Delta State, Nigeria, with focus on urban and semi-urban settings. In addition, the study explores the Social Studies teachers' perception as regards the opportunities that AI provides and the obstacles they face. Specifically, this study seeks to:

- i. identify the perception of Social Studies teachers about the role of AI in promoting intercultural understanding in both semi-urban and urban classrooms;
- ii. examine the opportunities AI presents for promoting intercultural understanding in Social Studies education;
- iii. identify the challenges Social Studies teachers face when integrating AI into the process of instruction; and
- iv. explore the factors that influences the successful implementation of AI in Social Studies classrooms to enhance intercultural understanding.

Research Questions

1. What are the perceptions of Social Studies teachers about the role of AI in promoting intercultural understanding in both semi-urban and urban classrooms?
2. In what ways does AI present opportunities for promoting intercultural understanding in Social Studies education?
3. What challenges do Social Studies teachers face when integrating AI into the process of instruction?
4. What factors influence the successful implementation of AI in Social Studies classrooms to enhance intercultural understanding?

Methods

Descriptive research design was employed in the study with focus on Social Studies teachers in secondary schools within Oshimili South local government area of Delta State, Nigeria. According to the 2024 educational statistics from the Delta State Ministry of

Education, there are approximately 13 public secondary schools in this local government area (deltastatemobse.net/SchoolsList.aspx), with an estimated 250 Social Studies teachers. A sample of 100 teachers was selected from this population using a stratified random sampling technique to ensure balanced representation from both urban and semi-urban areas. This approach was chosen to capture the diverse challenges and opportunities faced by teachers in different educational contexts. A structured questionnaire tagged 'Teachers' Perception and Experiences regarding the use of AI in Promoting Intercultural Understanding in the Social Studies Classrooms (TPEAIIUSSCQ) was the data collection instrument used.

The instrument was rated on a modified 5-point Likert scale of Strongly Agree (SA), Agree (A), Neutral (N), Disagree (D) and Strongly Disagree (SD). The options were weighted as follows SA (5 points), A (4 points), Neutral (3 points) D (2 points) and SD (1 point) as response rubric resulting in the mean score average of 3.00 as decision rule. To ensure the validity of the instrument, the questionnaire was reviewed by two experts in the field of Educational Measurement and Evaluation. A pilot study involving 25 teachers outside the study area was also conducted to modify the instrument based on the feedback received. The reliability of the questionnaire was measured through Cronbach's alpha statistical analysis that yielded 0.82 coefficient, which indicated a satisfactory level of internal consistency. Data was collected using on-the-spot approach in order to guarantee accurate return. Analysis of data collected was carried out using descriptive statistics of frequency counts, mean scores and standard deviation, to ensure a concrete comprehension of the role of AI in promoting intercultural understanding in Social Studies education.

Results

RQ1: What are the perceptions of Social Studies teachers about the role of AI in promoting intercultural understanding in both semi-urban and urban classrooms?

Table 1: Mean Score Table of the Perception of Social Studies Teachers about the Role of AI in Promoting Intercultural Understanding in their Classrooms

S/N	Statements	SA	A	N	D	SD	X	SD	Remark
1.	AI can enhance students' understanding of diverse cultures in Social Studies classrooms.	20	50	15	10	5	4.10	0.85	Agree
2.	I believe AI can help bridge cultural gaps among students in my class.	25	45	20	5	5	4.25	0.76	Agree
3.	AI tools effectively promote intercultural awareness and sensitivity.	30	40	20	5	5	4.30	0.71	Agree
4.	Social Studies teachers should integrate AI into their lessons to improve intercultural understanding.	35	45	10	5	5	4.35	0.72	Agree
5.	I feel confident in using AI to teach intercultural topics in Social Studies classrooms.	15	35	30	10	10	3.85	0.90	Agree
Grand Mean/SD							4.17	0.78	Agree

Table 1 shows that respondents agree with all statements as reflected in their mean scores which were above the mean score average of 3.00. This implies that Social Studies teachers hold a positive perception about the role of AI in promoting intercultural understanding in both semi-urban and urban classrooms as indicated by the grand mean of 4.17. The standard deviation of 0.78 further indicates that respondents were not far apart in their responses. Therefore, AI can play a significant role in enhancing intercultural understanding in Social Studies classrooms.

RQ2: In what ways does AI present opportunities for promoting intercultural understanding in Social Studies education?

Table 2: Mean Score Table of Opportunities AI Present for Promoting Intercultural Understanding in Social Studies Education

S/N	Statements	SA	A	N	D	SD	X	SD	Remark
6.	AI can provide personalized learning experiences that cater to students' cultural backgrounds.	35	30	20	10	5	3.80	1.16	Agree
7.	AI-based resources offer access to a wide variety of cultural content that enhances Social Studies teaching.	40	35	15	5	5	4.00	1.09	Agree
8.	AI technology allows for real-time language translation, facilitating intercultural communication.	50	25	15	5	5	4.10	1.13	Agree
9.	AI-powered simulations and virtual reality tools create immersive experiences that promote intercultural understanding.	45	35	10	5	5	4.10	1.09	Agree
10.	AI can help foster collaboration between students from different cultural backgrounds through online platforms.	30	40	15	10	5	3.80	1.12	Agree
Grand Mean/SD							3.96	1.12	Agree

Table 2 shows that respondents agree with all statements as reflected in their mean scores which were above the mean score average of 3.00 and by the grand mean of 3.96. The standard deviation of 1.12 further indicates that respondents were not far apart in their responses. This therefore underscores the point that, notwithstanding certain challenges, AI is capable of enriching Social Studies instruction by promoting increased cultural engagement and interaction among students from diverse backgrounds.

RQ3: What challenges do Social Studies teachers face when integrating AI into the process of instruction?

Table 3: Mean Score Table of Challenges Social Studies Teachers Face When Integrating AI into the Process of Instruction

S/N	Statements	SA	A	N	D	SD	X	SD	Remark
11.	Lack of proper training on how to effectively use AI tools in the classroom is a major challenge.	40	35	15	5	5	4.00	1.09	Agree
12.	Limited access to AI technologies in semi-urban schools hinders effective integration in Social Studies lessons.	45	30	10	9	6	3.99	1.06	Agree
13.	The cost of acquiring AI tools for teaching intercultural understanding is prohibitive.	35	40	15	6	4	3.96	1.04	Agree
14.	Some students may struggle with the use of AI technologies due to a lack of digital literacy.	30	45	15	6	4	3.91	1.02	Agree
15.	There is resistance from colleagues or school administration to the adoption of AI in teaching.	38	40	12	5	5	4.01	1.07	Agree
Grand Mean/SD							3.97	1.06	Agree

Table 3 shows that respondents agree with all statements as reflected in their mean scores which were above the mean score average of 3.00 and by the grand mean of 3.97. The standard deviation of 1.12 further indicates that respondents were not far apart in their responses. This therefore underscores the pressing need for targeted initiatives in teacher professional development, resource allocation, and infrastructure enhancement to support the effective integration of AI into Social Studies teaching.

RQ4: What factors influence the successful implementation of AI in Social Studies classrooms to enhance intercultural understanding?

Table 4: Mean Score Table of Factors Influencing the Successful Implementation of AI in Social Studies Classrooms to Enhance Intercultural Understanding

S/N	Statements	SA	A	N	D	SD	X	SD	Remark
16.	The availability of adequate resources and technologies is crucial for successful AI implementation.	50	30	10	5	5	4.15	1.10	Agree
17.	Teacher training and professional development programs significantly impact the success of AI integration.	45	35	10	5	5	4.10	1.09	Agree
18.	Support from school leadership is essential for effective implementation of AI in the classroom.	40	40	15	3	2	4.13	0.91	Agree
19.	The level of student interest in using AI tools influences the success of AI integration in Social Studies classrooms.	60	25	10	3	2	4.38	0.92	Agree
20.	Teachers, students and technology experts must work together for the success of AI integration.	55	30	10	5	0	4.35	0.85	Agree
Grand Mean/SD							4.22	0.97	Agree

Table 4 shows that respondents are in agreement with all the statements raised as reflected in their mean scores which were above the mean score average of 3.00 and by the grand mean of 4.22. The standard deviation of 0.97 further indicates that respondents were not far apart in their responses. This therefore implies that a general consensus exists among respondents that all factors considered equally affects effective utilization of AI in enhancing intercultural understanding in Social Studies classrooms.

Discussions

This study has revealed that Social Studies teachers hold a positive perception about the role of AI in promoting intercultural understanding in both semi-urban and urban classrooms. This is in

agreement with the findings of Vasquez et al. (2021), that leveraging technology in a bid to developing cultural understanding and empathy is fast becoming relevant. The finding is also in consonance with that of Okeke and Udo (2022) which states that while teachers identified AI as being capable of enhancing understanding of diverse cultures and improving intercultural sensitivity among students in the process of instruction.

In addition, this study found that AI presents several opportunities for improving intercultural understanding in Social Studies classrooms in ways such as providing real-time language translation that facilitates intercultural communication and providing independent learning experiences. This finding aligns with Garcia and Lopez (2020) that AI-enhanced technologies such as language translation and virtual cultural simulations improves students' ability to interact with other cultures. The finding also agrees with Okeke and Udo (2022) that most teachers passed a vote of confidence on the use of AI-driven technologies with particular emphasis on promoting localized content.

Furthermore, this study found that Social Studies teachers face diverse challenges when integrating AI into the process of instruction. Some of these challenges includes lack of training on utilization of AI technologies and resistance to the adoption of AI in teaching from teachers or even school leaderships. This finding aligns with Okeke and Udo (2022) that lack of technical infrastructure and absence of leadership support are some of the challenges to effective implementation of AI in schools. This finding also aligns with several submissions on challenges to AI integration such as Adebayo and Eze (2020) which stated that digital literacy levels among students is a challenge to AI integration and Adepoju et al. (2020) which stated that institutional and resource-related problems are challenges to AI integration.

Lastly, this study revealed that certain factors such as availability of relevant AI technologies and conduct of teacher training and professional development programs influence the effective implementation of AI technologies in Social Studies

classrooms. This finding is in agreement with Liu and Zhao (2023) that institutional support among others is an important factor that influences successful AI-enhanced learning. The finding also agrees with Heffernan et al. (2019) which stated that teacher collaboration and professional development play important roles in integrating AI.

Conclusion

The place of Artificial Intelligence (AI) in enhancing intercultural understanding among learners in Social Studies classrooms was explored in this study. The results show that Social Studies teachers no doubt recognize the varied potentials of AI in promoting cultural awareness, bridging cultural differences and developing in students, skills related to understanding global cultural perspectives. However, utilization of AI, is not free of challenges and these challenges underscore the need for addressing unhindered integration of AI into secondary schools. The findings of this study also aligns with current literature, which maintains that while AI is capable of transforming the education system, appropriate infrastructural developments, professionally trained and re-trained teachers alongside sound leadership support must be prioritized to genuinely effect any pre-conceived change.

Recommendations

Based on these findings, the study recommends that there is an urgent need for detailed teacher professional development programmes. These programmes should not only cover technological competencies but also teaching strategies that align with the utilization of AI in order to promote intercultural understanding among students. Furthermore, the state government and state educational authorities should prioritize funding for AI technologies in public schools in both semi-urban and urban areas. Additionally, School leaderships should promote a collaborative teaching-learning environment among teachers and students. These recommendations when applied, it is believed

will contribute to harnessing the potentials of AI in not just transforming classrooms but also enhancing intercultural understanding in our increasing multi-cultural classrooms.

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