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Transforming Social Studies Pedagogy: Artificial Intelligence-Based tool and Students' Academic Performance in Ondo State, Nigeria

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ABSTRACT

This study examined the transformation of social studies pedagogy through artificial intelligence-based tools and students' academic performance in Ondo State, Nigeria. This study adopted a pre-test, post-test control group quasi-experimental research design. Three objectives were set for the study, and three research hypotheses were formulated to guide it. The population for the study consisted of all secondary students in Ondo State. The sample population comprised 163 Junior Secondary School (JSS II) students drawn from four public secondary schools randomly selected in the Ondo West Local Government Area of Ondo State, Nigeria. Two instruments were used in the study. They are the Social Studies Performance Test (SSPT) and the Modified Lesson Note (MLN). All the instruments were validated by experts. The reliability of the instrument (SSPT) was determined, and a reliability coefficient of 0.83 was obtained. Students' academic data was collected, and we analyzed covariances (ANCOVA). variance (ANCOVA). The social studies that students exposed to ITS demonstrated significantly higher academic performance than those taught by other methods ($F(1,154) = 111.124$, $p < 0.05$, partial $\eta^2 = .419$). The findings also revealed no significant effects of gender and school location on students' academic performance. This evidence suggests that intelligent tutoring systems (ITS) provide equitable learning opportunities. The study recommends increased investment in ICT infrastructure, teacher training, and policy interventions to enhance ITS integration into the teaching and learning of secondary schools' subjects.

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1. INTRODUCTION

The swift advancement and proliferation of technology in the 21st century have resulted in a significant transformation of the educational environment (Pandey, 2023; Rahimi & Oh, 2024). Technological progress across all domains of existence marks this

epoch. The 21st century in education signifies the essential competencies that educators and students must develop to succeed in the contemporary world: collaboration, digital literacy, problem-solving abilities, and critical thinking (Sabandar et al., 2018; González-Pérez & Ramírez-Montoya, 2022). Contemporary learners exhibit significant engagement with technology, and in the realm of education, artificial intelligence-driven tools, such as intelligent tutoring systems, represent strategies that can enhance students' academic performance, particularly in social studies (Yerbabuena Torres et al., 2024; Halkiopoulos & Gkintoni, 2024).

Social studies have historically been a key subject in the school curriculum (Busey et al., 2023). The subject has been acknowledged as an effective instrument for citizenship education in Nigeria. It is a discipline that endows learners with essential skills to address human challenges. It not only facilitates individual success both personally and professionally but also equips students for undergraduate programs (Haverback, 2017; Kistner et al., 2021; Egan et al., 2025). Social studies regulate the existence of individuals, societies, and contemporary states. The subject holds substantial importance in international relations (Myers, 2006; Zevin, 2015; Orim et al., 2018). Understanding social studies helps address human development challenges. Social studies enable individuals to think strategically and make decisions that enhance outcomes. It is an interdisciplinary field that integrates politics, sociology, psychology, and history (Oteng et al., 2023).

The intelligent tutoring system (ITS) is an artificial intelligence tool utilized by educators in social studies classrooms (Alam, 2022; Wang et al., 2023). Information Technology Services Lin et al. (2023) describe it as an advanced educational software system that employs artificial intelligence techniques to emulate the adaptive and personalized instructional methods usually offered by human tutors. Ma et al. (2014) characterize intelligent tutoring systems (ITSs) as a type of computer- or internet-based learning that is flexible, encompassing all electronically supported forms of learning, whether via the internet or not, including texts, images, animations, audio, or video. This software category enables students to progress at their own speed. This software may attract social studies educators and learners for various reasons (Mousavinasab et al., 2021). The unique learning pace of students can facilitate the customization of instruction for those with advanced social science knowledge while simultaneously assisting those with inadequate social science understanding within the same classroom (Manjang et al., 2024). Lampropoulos (2023) and Ahuja et al. (2025) assert that Intelligent Tutoring Systems (ITS) facilitate self-paced learning, enabling students to advance at their rate, thereby catering to diverse learning styles and competencies. ITSs may also assist students facing language barriers. Despite the lack of standardization in the features of Intelligent Tutoring Systems (ITSs) across various programs, four widely recognized conceptual components are (1) the user interface for interaction with the computer, (2) the domain model delineating the requisite knowledge for the student, (3) a cognitive map of student understanding derived from responses to inquiries, and (4) a tutoring feature incorporating instructional strategies (Singh et al., 2022).

Educators serve as the custodians of technology integration for educational purposes within their classrooms (Meremikwu et al., 2023; Wyss & Bäuerlein, 2024). The technology utilized by students to engage with social studies, the frequency of its use, and the nature of the learning that accompanies it are all influenced by social studies educators. In the current technological era, there are grievances and allegations that social studies educators persist in utilizing conventional pedagogical methods, especially the lecture format (Russell III, 2010; Deflem, 2021). Critics describe and predominantly condemn these teacher-centered methodologies in social studies for their propensity to diminish student engagement and creativity, consequently restricting academic achievement. In this framework, the educator serves as the purveyor of knowledge, possessing the solutions to all inquiries, and rarely allows student contributions in the instructional process. Moreover, it deters students from participating in practical and creative learning endeavors throughout the educational process. Consequently, it is essential to employ AI-based tools (ITSs) to evaluate potential enhancements in students' academic performance in social studies (Alshammari & Al-Enezi, 2024).

Gender is a significant factor influencing the utilization of technology for instructional purposes (Reychav & McHaney, 2017). Rigual et al. (2022) delineate gender as a system of differentiation and categorization influenced by cultural and biological factors, ultimately expressed through social practices and norms that establish expectations regarding identity, roles, and behaviors. Gender disparities influence students' engagement or apathy towards technology and social studies, as observed by Becker–Blease and Sohl (2011). They asserted that "male students exhibit a greater inclination towards computer-related tasks and demonstrate higher levels of interest in programming and software development compared to female students." Cheryan et al. (2017) indicate that gender disparities in interest and confidence in technology may influence the efficacy of ITS in enhancing academic performance.

A further learning characteristic that can affect students' academic performance in social studies is the geographical location of the school (Unugo, 2023). The location of a school, as defined by Okeke and Maduabuchi (2018), pertains to the physical environment or geographical context in which a school is established, including urban, suburban, or rural regions. Alabi (2023) asserts that educational institutions in urban regions have demonstrated superior performance compared to their rural counterparts. Adelokun and Abidoye (2024) indicate that the location of schools in urban areas significantly influences students' attitudes toward mathematics, chemistry, and other academic subjects.

Statement of the Problem

Effective and efficient learning methods that could help improve students' academic performance in social studies are most desired. Despite the emerging trend in technological applications, social studies teachers are still using traditional methods of instructional delivery, which fail to give learners active participation in the teaching and learning process. Studies also revealed that many social studies teachers in Ondo State

have informal knowledge of technology (computers and applications), but there is no concerted effort to help them in the integration of artificial intelligence-based tools in social studies instruction. This paper therefore calls for an innovative approach with artificial intelligence-based tools (ITS) to engage students in learning and also to improve their academic performance in social studies. Hence, there is a need for this study. This study therefore examines transforming social studies pedagogy through artificial intelligence-based tools and students' academic performance in Ondo State, Nigeria.

This study aims at achieving the following objectives: (i) To examine the effect of ITS on students' academic performance in social studies in Ondo State. (ii) To determine the influence of gender on students' academic performance in social studies in Ondo State. (iii) To determine the effect of school location on students; academic performance in social studies in Ondo State.

In this study, we formulate and test the following research hypotheses. All hypotheses were tested at the 0.05 level of significance.

1. Ho1: There is no significant effect of the Intelligence Tutoring System (ITS) on secondary school students' academic performance in social studies in Ondo State.
2. HO2: There is no significant effect of gender on secondary school students' academic performance in social studies in Ondo State.
3. HO3: There is no significant effect of school location on secondary school students' academic performance in social studies in Ondo State.

2. METHOD

This study adopted a pretest-posttest, control group, quasi-experimental research design. The sample population for this study consisted of 163 Junior Secondary School 2 (JSS2) students from four schools randomly selected in the Ondo West Local Government area of Ondo State. The purposive sample technique was used to select the sample schools. Schools that have functional ICT laboratories and facilities were selected for the study. Intact classes were used in all the sampled schools. Two schools were sampled for the experimental group, and two schools were sampled as the control groups. The following presents the pretest-posttest, control group, quasi-experimental research design in Figure 1.

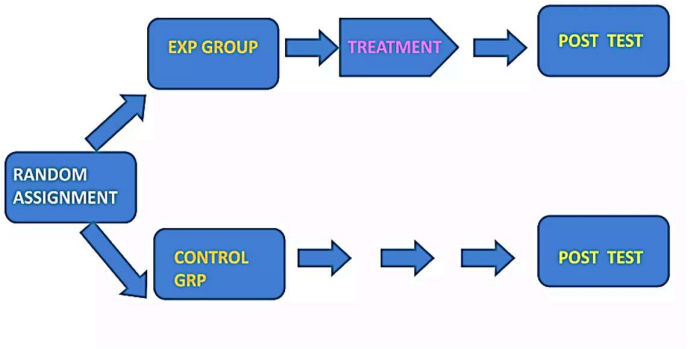

Figure 1. Quasi-Experimental Research Design

Two instruments were used in the study. They are the Social Studies Performance Test (SSPT) and Modified Lesson Notes (MLN) used to teach the experimental groups. All the instruments were validated by experts. The reliability coefficient of the instrument was also determined using the Cronbach's alpha method. The reliability coefficient of 0.83 was obtained, which was considered high enough for the instrument to be used. The experimental groups were taught selected topics in social studies, such as family and the social environment, while the control groups were taught using conventional teaching methods. All hypotheses were tested using the ANCOVA statistical tool at the 0.05 level of significance.

3. RESULTS AND DISCUSSION

Results

$H0_1$: There is no significant effect of Intelligence Tutoring System (ITS) on secondary school students' academic performance in Social Studies in Ondo State.

Table 1. Analysis of Covariance (ANCOVA)

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	9465.990[a]	8	1183.249	16.145	.000	.456
Intercept	44813.785	1	44813.785	611.463	.000	.799
Pretest	14.766	1	14.766	.201	.654	.001
Gender	76.448	1	76.448	1.043	.309	.007
Location	179.283	1	179.283	2.446	.120	.016
Treatment	8144.198	1	8144.198	111.124	.000	.419
Gender * Location	139.512	1	139.512	1.904	.170	.012
Gender * Treatment	60.523	1	60.523	.826	.365	.005
Location * Treatment	81.471	1	81.471	1.112	.293	.007
Gender * Location * Treatment	3.175	1	3.175	.043	.835	.000
Error	11286.574	154	73.289			
Total	699583.000	163				
Corrected Total	20752.564	162				

a. R Squared = .456 (Adjusted R Squared = .428)

Table 1 indicated that there is significant main effect of treatments (Intelligent Tutoring System, ITS) on students' academic performance in social studies ($F_{(1,154)} = 111.124$; $p<0.05$, partial $\eta^2 = .419$). The treatment effect size is 41.9% (partial η^2 x 100). This result means that there is significant difference in the post-performance mean scores of the students due to the treatments. Thus, the null hypothesis 1 was rejected. To determine the mean difference across the groups, the Estimated Marginal Means of the treatment groups were carried out and the result is presented in Table 2.

Table 2. Estimated Marginal Means of Post-Performance across the Groups

Variables	N	Mean	Std. Error
INTERCEPT			
Pretest (Pre-performance)	163	36.39	-
Post test (post-performance)	163	64.53	11.32
TREATMENTS			
Experimental (ITS)	72	72.83	1..07
Control (Conventional teaching)	91	57.89	.93
GENDER			
Male	69	66.09	1.09
Female	94	64.64	.91
LOCATION			
Urban	90	66.47	.94
Rural	73	64.26	1.06

Table 2 reveals that the pre-performance mean score (covariates) of the students was 36.39, while it became 64.53 after treatments, with the effect of covariates statistically controlled. The table further shows that students exposed to the Intelligent Tutoring System Package (ITSP) had a higher post-performance mean score ($\overline{x}$ = 72.83) compared to those taught using the conventional teaching method ($\overline{x}$ = 57.89). This result implies that ITS might be more effective in improving students' performance. Additionally, the table indicates that male participants had a post-performance mean score of $\overline{x}$ = 66.09, while female participants had a slightly lower mean score of $\overline{x}$ = 64.64, reflecting minimal differences in performance between genders. The table also shows that students in urban areas achieved a higher mean post-performance score ($\overline{x}$ = 66.47) than those in rural areas ($\overline{x}$ = 64.26), though the difference is relatively small.

$H0_2$: There is no significant effect of gender on secondary school students'academic performance in Social Studies in Ondo State.

From Table 1, it is shown that gender has no significant main effect on the students' performance in Social Studies ($F_{(1,154)} = 1.043$; $p > 0.05$; $\eta^2 = .007$). The effect size is 0.7%. This means that the mean score of the male and female students in Social Studies do not differ significantly. Hence, hypothesis 2 is not rejected.

$H0_3$: There is no significant effect of school location on secondary school students'academic performance in Social Studies in Ondo State.

From Table 1, it shows that location has no significant main effect on the students' performance in Social Studies ($F_{(1,154)} = 2.446$; $p > 0.05$; $\eta^2 = .016$). The effect size is 1.6%. This means that the mean score of the urban and rural students in Social Studies do not differ significantly. Hence, hypothesis 3 is not rejected.

Discussion

The findings from hypothesis one revealed a significant positive effect of intelligent tutoring systems (ITS) on students' academic achievement in social studies. This supports earlier research by Phillips et al. (2021) and Lin et al. (2023), who reported that intelligent tutoring systems (ITS)-based instruction enhances learning outcomes through personalized feedback and adaptive learning pathways. The ability of ITS to provide real-time feedback and tailored learning experiences makes it a valuable educational tool (Durães et al., 2019; Anwar et al., 2022). Personalized learning experiences ensure that students progress at their pace, reducing frustration and enhancing comprehension (Alrakhawi et al., 2023). This finding calls for ITS adoption in other subject areas to further validate its effectiveness in improving student learning outcomes

On gender, the study revealed no significant gender effect on students' academic performance. This finding aligns with the findings of Abbott et al. (2014), Nwosu and Okeke (2022), who posited that technology-based learning tools provide an equitable learning experience for both male and female students. This suggests that ITS can bridge gender disparities in social studies education by providing equal learning opportunities. Given that traditional classroom settings sometimes exhibit gender-based disparities in participation and engagement, ITS offers a neutral platform where all students receive the same level of guidance and interaction, promoting inclusivity and equal academic performance (Salas-Pilco et al., 2022).

The study further revealed no significant effect of school location on students' achievement, indicating that ITS benefits students in both urban and rural settings. This supports findings by Ribeiro et al. (2021) and Adejumo and Ogunleye (2023), who found that digital learning tools can mitigate location-based learning disadvantages when properly implemented. The implication is that ITS has the potential to bridge the urban-rural education divide, ensuring that students in remote areas have access to high-quality learning resources comparable to their urban counterparts. This issue is particularly significant in Nigeria, where rural schools often face greater educational challenges compared to urban schools.

4. CONCLUSION

The findings of this study highlight the transformative potential of intelligent tutoring systems (ITS) in improving students' academic achievement in social studies. Despite the existing infrastructural limitations, students have a positive attitude toward ITS, reflecting its potential effectiveness as an instructional tool. The study confirmed that ITS significantly enhances learning outcomes, reinforcing its role in modern education. Furthermore, the lack of significant effects of gender and school location suggests that ITS can be successfully implemented in diverse educational settings without bias. Although ITS presents a promising future for education in Nigeria, its full potential can only be realized through adequate infrastructural support, continuous teacher training, and policy frameworks that facilitate its integration into the education system.

As a suggestion, in-service training for social studies teachers on appropriate techniques on the use of intelligence tutoring systems instructional methods by the governments at all levels. Both male and female teachers should be encouraged to use intelligence tutoring systems' instructional methods.

REFERENCES

Abbott, G., Bievenue, L., Damarin, S., & Kramarae, C. (2014). Gender equity in the use of educational technology. In *Handbook for achieving gender equity through education* (pp. 221-244). Routledge. https://doi.org/10.4324/9781315759586-20

Adelokun A.K. & Abidoye, J., A. (2024) Assessment on the Use of Zoom Technology for Learning among Undergraduate Students of Adeyemi Federal University of Education, Ondo. *Zamfara International Journal of Education, 4*(*2*)*,* 67-73.

Ahuja, N. J., Dutt, S., Choudhary, S. L., & Kumar, M. (2025). Intelligent tutoring system in education for disabled learners using human–computer interaction and augmented reality. *International Journal of Human–Computer Interaction*, *41*(3), 1804-1816. https://doi.org/10.1080/10447318.2022.2124359

Alabi, A. J. Effectiveness of Video Blog Instructional Package and Senior Secondary School Academic Performance in Geography in Ondo State, Nigeria.

Alam, A. (2022). Employing adaptive learning and intelligent tutoring robots for virtual classrooms and smart campuses: reforming education in the age of artificial intelligence. In *Advanced computing and intelligent technologies: Proceedings of ICACIT 2022* (pp. 395-406). Singapore: Springer Nature Singapore. https://doi.org/10.1007/978-981-19-2980-9_32

Alrakhawi, H. A., Jamiat, N. U. R. U. L. L. I. Z. A. M., & Abu-Naser, S. S. (2023). Intelligent tutoring systems in education: a systematic review of usage, tools, effects and evaluation. *Journal of Theoretical and Applied Information Technology*, *101*(4), 1205-1226.

Alshammari, A., & Al-Enezi, S. (2024). Role of artificial intelligence in enhancing learning outcomes of pre-service social studies teachers. *Journal of Social Studies Education Research*, *15*(4), 163-196. https://www.learntechlib.org/p/224777/

Anwar, A., Haq, I. U., Mian, I. A., Shah, F., Alroobaea, R., Hussain, S., ... & Umar, F. (2022). Applying Real-Time Dynamic Scaffolding Techniques during Tutoring Sessions Using Intelligent Tutoring Systems. *Mobile Information Systems*, *2022*(1), 6006467. https://doi.org/10.1155/2022/6006467

Becker–Blease, J. R., & Sohl, J. E. (2011). The effect of gender diversity on angel group investment. *Entrepreneurship Theory and Practice*, *35*(4), 709-733. https://doi.org/10.1111/j.1540-6520.2010.00391.x

Busey, C. L., Duncan, K. E., & Dowie-Chin, T. (2023). Critical what what? A theoretical systematic review of 15 years of critical race theory research in social studies education, 2004–2019. *Review of Educational Research*, *93*(3), 412-453. https://doi.org/10.3102/00346543221105551

Cheryan, S., Ziegler, S. A., Montoya, A. K., & Jiang, L. (2017). Why are some STEM fields more gender balanced than others?. *Psychological bulletin*, *143*(1), 1. https://psycnet.apa.org/buy/2016-48466-001

Deflem, M. (2021). The right to teach in a hyper-digital age: Legal protections for (post-) pandemic concerns. *Society*, *58*(3), 204-212. https://doi.org/10.1007/s12115-021-00584-w

Durães, D., Toala, R., Gonçalves, F., & Novais, P. (2019). Intelligent tutoring system to improve learning outcomes. *Ai Communications*, *32*(3), 161-174. https://doi.org/10.3233/AIC-190624

Egan, H. E., Adie, H. I., Bisong, K. B., Ekpoto, A. E., Orji, E. I., Jelman, B. G. & Anyebe, M. (2025). Diversification of funding and students learning outcomes in economics in Calabar education zone, Cross River State. *Irish Journal of Educational Practice, 8*(*3*)*,* 102-118.

González-Pérez, L. I., & Ramírez-Montoya, M. S. (2022). Components of Education 4.0 in 21st century skills frameworks: systematic review. *Sustainability*, *14*(3), 1493. https://doi.org/10.3390/su14031493

Halkiopoulos, C., & Gkintoni, E. (2024). Leveraging AI in e-learning: Personalized learning and adaptive assessment through cognitive neuropsychology—A systematic analysis. *Electronics*, *13*(18), 3762. https://doi.org/10.3390/electronics13183762

Haverback, H. R. (2017). Why don't we teach social studies? Preservice teachers' social studies self-efficacy. *Social Studies Research and Practice*, *12*(3), 245-257. https://doi.org/10.1108/SSRP-07-2017-0034

Kistner, K., Sparck, E. M., Liu, A., Sayson, H. W., Levis-Fitzgerald, M., & Arnold, W. (2021). Academic and professional preparedness: Outcomes of undergraduate research in the humanities, arts, and social sciences. *Scholarship and practice of undergraduate research*, *4*(4), 3-9.

Lampropoulos, G. (2023). Augmented reality and artificial intelligence in education: Toward immersive intelligent tutoring systems. In *Augmented reality and artificial intelligence: The fusion of advanced technologies* (pp. 137-146). Cham: Springer Nature Switzerland. https://doi.org/10.1007/978-3-031-27166-3_8

Lin, C. C., Huang, A. Y., & Lu, O. H. (2023). Artificial intelligence in intelligent tutoring systems toward sustainable education: a systematic review. *Smart learning environments*, *10*(1), 41. https://doi.org/10.1186/s40561-023-00260-y

Ma, W., Adesope, O. O., Nesbit, J. C., & Liu, Q. (2014). Intelligent tutoring systems and learning outcomes: A meta-analysis. *Journal of educational psychology*, *106*(4), 901. https://psycnet.apa.org/buy/2014-25074-001

Manjang, A. J., Umaru, R. J., & Egan, H. E. (2024). Effects of visual metaphor on pupils' achievement in Social Studies in Bassa, Plateau State. *International Journal of Education and Evaluation*, *10*(3), 243-249.

Meremikwu, A., Ekwueme, C. O., & Opoh, D. A. (2023). Modern teaching strategies and mathematics academic achievement among junior secondary school students in post–covid–19 era in calabar education zone, cross river state, nigeria. *Global Journal of Educational Research*, *22*(1), 1-9. https://doi.org/10.4314/gjedr.v22i1.1

Mousavinasab, E., Zarifsanaiey, N., R. Niakan Kalhori, S., Rakhshan, M., Keikha, L., & Ghazi Saeedi, M. (2021). Intelligent tutoring systems: a systematic review of characteristics, applications, and evaluation methods. *Interactive Learning Environments*, *29*(1), 142-163. https://doi.org/10.1080/10494820.2018.1558257

Myers, J. P. (2006). Rethinking the social studies curriculum in the context of globalization: Education for global citizenship in the US. *Theory & Research in Social Education*, *34*(3), 370-394. https://doi.org/10.1080/00933104.2006.10473313

Nwosu, C., & Okeke, I. (2022). Gender disparities in technology-driven learning environments. *Education and Gender Studies Journal*, *17*(*3*), 87-101.

Okeke, C. I. O., & Maduabuchi, O. P. (2018). The impact of school location on students' academic achievement: A Nigerian perspective. *Journal of Contemporary Issues in Education*, *13*(*2*), 78–93.

Orim, R. E., Opoh, F. A. & Igwe, B. I. (2018). Information and communication technology: The leading way for teaching and learning in Nigeria. *Journal of Environmental and Tourism Education, 1*(*1*)*,* 240-246.

Oteng, B., Mensah, R. O., Adiza Babah, P., & Swanzy-Impraim, E. (2023). Social studies and history curriculum assessment in colleges of education in Ghana: Reflective practices of teacher educators. *Cogent Education*, *10*(1), 2175515. https://doi.org/10.1080/2331186X.2023.2175515

Pandey, A. (2023). E-learning and education 4.0: revolution in education of 21st century. In *International Conference on Digital Technologies and Applications* (pp. 431-438). Cham: Springer Nature Switzerland. https://doi.org/10.1007/978-3-031-29860-8_44

Phillips, A., Pane, J. F., Reumann-Moore, R., & Shenbanjo, O. (2020). Implementing an adaptive intelligent tutoring system as an instructional supplement. *Educational Technology Research and Development*, *68*(3), 1409-1437. https://doi.org/10.1007/s11423-020-09745-w

Rahimi, R. A., & Oh, G. S. (2024). Rethinking the role of educators in the 21st century: navigating globalization, technology, and pandemics. *Journal of Marketing Analytics*, *12*(2), 182-197. https://doi.org/10.1057/s41270-024-00303-4

Reychav, I., & McHaney, R. (2017). The relationship between gender and mobile technology use in collaborative learning settings: An empirical investigation. *Computers & Education*, *113*, 61-74. https://doi.org/10.1016/j.compedu.2017.05.005

Ribeiro, F. R., Silva, A., Silva, A. P., & Metrôlho, J. (2021). Literature Review of Location-Based Mobile Games in Education: Challenges, Impacts and Opportunities. *Informatics*, *8*(3), 43. https://doi.org/10.3390/informatics8030043

Rigual, C., Prügl, E., & Kunz, R. (2022). Gender and the micro-dynamics of violent conflicts. *International Feminist Journal of Politics*, *24*(3), 345-367. https://doi.org/10.1080/14616742.2022.2083652

Russell III, W. B. (2010). Teaching social studies in the 21st century: A research study of secondary social studies teachers' instructional methods and practices. *Action in Teacher Education*, *32*(1), 65-72. https://doi.org/10.1080/01626620.2010.10463543

Sabandar, G., Supit, N., & Suryana, E. (2018). Kahoot!: Bring the fun Into the classroom!. *Indonesian Journal of Informatics Education*, *2*(2), 127-134.

Salas-Pilco, S. Z., Xiao, K., & Oshima, J. (2022). Artificial intelligence and new technologies in inclusive education for minority students: A systematic review. *Sustainability*, *14*(20), 13572. https://doi.org/10.3390/su142013572

Singh, N., Gunjan, V. K., Mishra, A. K., Mishra, R. K., & Nawaz, N. (2022). SeisTutor: a custom-tailored intelligent tutoring system and sustainable education. *Sustainability*, *14*(7), 4167. https://doi.org/10.3390/su14074167

Unugo, L. O. (2023). Impact Of School Location on Students'academic Achievement in Social Studies Among Junior Secondary School Students in Abakaliki Education Zone of Ebonyi State. *Ebonyi State College of Education, Ikwo Journal of Educational Research*, *8*(2). https://ebscoeijer.org/index.php/self/article/view/34

Wang, H., Tlili, A., Huang, R., Cai, Z., Li, M., Cheng, Z., ... & Fei, C. (2023). Examining the applications of intelligent tutoring systems in real educational contexts: A systematic literature review from the social experiment perspective. *Education and information technologies*, *28*(7), 9113-9148. https://doi.org/10.1007/s10639-022-11555-x

Wyss, C., & Bäuerlein, K. (2024). Augmented Reality in the Classroom—Mentor Teachers' Attitudes and Technology Use. *Virtual Worlds*, *3*(4), 572-585. https://doi.org/10.3390/virtualworlds3040029

Yerbabuena Torres, C. F., Villagomez Cabezas, A. V., Yerbabuena Torres, A. R., & Mendoza Torres, N. A. (2024). Artificial Intelligence Tools Applied to Education: A Systematic Literature Review. *International Journal of Interactive Mobile Technologies*, *18*(24). https://doi.org/10.3991/ijim.v18i24.50055

Zevin, J. (2015). *Social studies for the twenty-first century: Methods and materials for teaching in middle and secondary schools*. Routledge.