Perceived Emotional and Interpersonal Skills Development in AI-Based and Human-Based Learning: A Survey of Secondary School Students in Ogun State, Nigeria

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DOI: https://dx.doi.org/10.51584/IJRIAS.2026.11060112

Received: 05 June 2026; Accepted: 13 June 2026; Published: 27 June 2026

ABSTRACT

The rapid integration of Artificial Intelligence (AI) into educational settings has significantly transformed instructional delivery, prompting critical inquiry into its implications beyond cognitive outcomes. This study examined secondary school students' perceptions of AI-based and human-based instructional approaches in relation to the development of emotional and interpersonal competencies. Using a questionnaire survey administered to 1,200 secondary school students in Ogun State, Nigeria, the study assessed four key dimensions: empathy, motivational support, cultural responsiveness, and role modelling. Findings revealed that while AI-based learning is perceived as effective in enhancing personalisation, accessibility, and feedback efficiency, it is comparatively limited in fostering emotionally grounded and socially embedded learning experiences. Human-led instruction, by contrast, is perceived as more influential in nurturing empathy, relational trust, and interpersonal awareness, suggesting that concerns over AI supplanting teachers remain largely unfounded. These findings contribute to ongoing scholarly discourse in educational technology and support the case for a hybrid pedagogical model that strategically leverages AI capabilities alongside the socio-emotional affordances of human instruction.

Keywords: AI-Based, Emotional Skills, Human-Based, Interpersonal skills, Learning Methods, Technology-driven instruction

INTRODUCTION

In today's rapidly changing educational landscape, the importance of emotional and interpersonal skills cannot be overemphasized. According to Roorda et al. (2011) and Hatti (2012), it has been confirmed that emotional and interpersonal relationships are associated with better academic performance. Furthermore, Brackett et al. (2019) stated that emotional intelligence is a critical factor in academic success. Thus, as students navigate this complex social environment and prepare for careers in an increasingly interconnected world, they require effective learning approaches to develop these essential skills. Two prominent methods of teaching and learning now exists: AI-based learning and human-based learning. While the AI-based learning method is still evolving, the human-based learning method has been with us for centuries.

The application of technology in education dates back to the 1950s with the introduction of computer-assisted instruction (Chan and Tsi, 2023). Since then, the technology has evolved into learning management systems, and of recent, AI, which are now used for teaching and learning (Nwana, 1990). Recent advances in AI as a learning tool has shifted attention to the ongoing debate on whether AI will replace teachers or not (Cerullo, 2023). The introduction of humanoid robots, chatbots, etc into the teaching and learning process tend to escalate the debate (Chen, Chen and Lin, 2020; ThinkMl Team, 2022; UNESCO, 2021). The use of these technologies, nevertheless, can improve on students' engagement (Malik, Tayal and Vij, 2019; Chen, Chen and Lin, 2020).

From the foregoing, AI-based learning method has revolutionized access to education and individualized instruction. However, while this method excels in promoting cognitive skills, there have been questions

ISSN No. 2454-6194 | DOI: 10.51584/IJRIAS |Volume XI Issue VI June 2026

regarding its effectiveness in the development of emotional and interpersonal skills, which are critical for students' holistic development.

On the other hand, human-based learning method emphasizes face-to-face interaction, mentorship, emotional engagement, and collaborative learning, positioning human relationships at the center of the educational experience. This method is rooted in social constructivist and emotional intelligence theories, which argue that emotional and social learning occurs most effectively through authentic human connections and social contexts.

The growing recognition of emotional and interpersonal competencies as central pillars of 21st century education, owing largely to their well-documented association with academic achievement and lifelong success, makes it both timely and necessary to examine how students perceive different instructional approaches in relation to the development of these skills. Teaching and learning are no longer confined to the transmission of subject knowledge; they encompass the cultivation of the whole person.

Against this background, the present study surveyed secondary school students in Ogun State, Nigeria, to capture their perceptions of AI-based and human-based learning methods with respect to the development of empathy, communication, collaboration, and relationship building. By critically examining these perceptions, the study seeks to provide educators and policymakers with evidence-informed insights that can guide more thoughtful decisions about integrating AI tools and human interaction within educational settings.

Statement of the Problem

Adolescence is a critical period in human development, during which young people form the emotional and social foundations that shape their personal relationships, career trajectories, and civic participation. For secondary school students in Nigeria, this stage is particularly significant, as it coincides with exposure to diverse social environments that demand emotional intelligence, empathy, teamwork, and effective interpersonal communication. Sustaining instructional approaches that nurture these competencies is therefore not merely desirable but educationally imperative.

In recent years, the growing adoption of Artificial Intelligence in Nigerian secondary schools has introduced new possibilities for personalised and technology-driven learning. However, the enthusiasm surrounding AI-based instruction has largely centred on its cognitive and academic benefits, with comparatively little attention given to its capacity to support the emotional and interpersonal development of learners. Teaching is, at its core, a deeply human endeavour. It involves not only the transmission of knowledge but also the expression of care, the modelling of values, and the building of trust between teachers and students. Whether AI-based learning tools can replicate or approximate these dimensions of human instruction remains an open and pressing question.

It is against this backdrop that the present study is situated. While existing literature has explored the academic outcomes of AI-driven instruction, the extent to which such approaches compare with human-based teaching in fostering emotional and interpersonal competencies among secondary school students in Ogun State, Nigeria, remains insufficiently examined. This study seeks to address that gap.

Objectives of the Study

The objectives of this study are to:

1. Examine students' perceptions of teachers' demonstration of empathy and motivational support in comparison to AI-based learning tools.
2. Assess students' perceptions of the effectiveness of teachers in helping learners overcome challenges through support, guidance, counselling, and encouragement, relative to AI-based learning tools.
3. Investigate students' perceptions of teachers' responsiveness to cultural differences among learners in comparison to AI-based learning tools.
4. Evaluate students' perceptions of teachers as role models in relation to AI-based learning tools

ISSN No. 2454-6194 | DOI: 10.51584/IJRIAS |Volume XI Issue VI June 2026

Research Questions (RQ)

RQ1: To what extent do students perceive teachers as demonstrating greater empathy and motivational support compared to AI-based learning tools?

RQ2: To what extent do students perceive teachers as more effective in helping them overcome challenges through support, guidance, counselling, and encouragement compared to AI-based learning tools?

RQ3: To what extent do students perceive teachers as more responsive to cultural differences among learners compared to AI-based learning tools?

RQ4: To what extent do students perceive teachers as more effective role models compared to AI-based learning tools?

The answers to research questions 1 and 2 indicate the level of emotional skill development among the students, while the answers to research questions 3 and 4 show the level of interpersonal skill development among the students.

LITERATURE REVIEW

As the use of AI in education continues to rise, researchers continue to investigate on the effect of this evolving technology on the students' academic performance. For instance, Chiu et al. (2023) listed four (4) benefits of AI in the educational sector. These include: provision of assignments tailored to individual abilities (individualized learning); increases human-computer interaction; assesses students' abilities for constructive critique; and improves and provides adaptive teaching strategies. Other functions of AI according to Moroianu, Iacob and Constantin (2023) are: improves teachers' use of instructional materials; supports teachers' on the job professional development; provides automatic assessment and instant feedback; predicts students' academic performance; and provides empirical data for decision makers, among others. Supporting these authors, Mafara and Abdullahi (2024) stated that AI has the unique advantage of ensuring learners learn within their pace through its medium of personalized learning, and automation of assessment and feedback process on what the students have learnt.

Similarly, other studies have also made contributions on the importance of AI in the teaching and learning. According to Mollick and Mollick (2023), the use of AI technology can help expand teachers' capabilities, enhance learning, and support evidence-based teaching practices. In a related development, Lee and Yeo (2022) stated that the use of AI provides opportunities for pre-service teachers to develop their pedagogical competencies. Furthermore, in a study conducted by Jiahong and Weipeng (2022), it was found that the influence of artificial intelligence on early childhood education showed a significant enhancement in children's conceptual comprehension of AI, which led to an improvement in reading ability, and solving computational problem. These findings aligned with the recent work of Iku-Silan et al. (2023), which similarly demonstrated that the intelligent conversational agent could confer significant advantages in terms of students' commitment levels and mental workload. Results from the study of Okunade (2024) highlighted the roles of AI in the teaching of science subjects in secondary schools in Nigeria, where Adaptive Learning Systems personalizes the learning process, Intelligent Tutoring Systems provides interactive and individualized instruction, and Virtual Laboratories and Simulations offer immersive digital experiments.

Furthermore, the use of a chatbot has the capacity of giving students a favorable reading experience, while arresting the students' attention and cultivating their interests in the learning process (Liu et al., 2022). According to Mizumoto and Eguchi (2023) and Ray (2023), ChatGPT holds potential for various applications in education which include among others: tailoring education materials and lesson plans to align with individual learners' requirements and preferences; providing learners with timely feedback, etc.

According to Ayala-Pazmino (2023), Artificial Intelligence has its benefits and risks. He posited that the benefits include: enhanced personalized learning, improved assessment, and reduction of planning time for teachers, while the risks include: cheating, privacy compromise, bias and dehumanization of the teaching and learning

process. Similarly, the use of Artificial Intelligence in education according to Liao et al. (2021) can widen the digital divide as not all students have equal access to the technology and/or internet, which may increase the already existing in-balances in educational opportunities and its attendance consequences.

In this 21st century that is full of social deviants, the development of emotional and interpersonal skills are important for personality development, the development of pro-social behavior, and positive emotional growth. Reviews from the literature by Durlak et al. (2011), Korpershoek et al. (2016), Taylor et al. (2017), and Corcoran et al. (2018) have proven the effectiveness of human-based learning method in the development of social-emotional skills among learners. In a related development, the findings from the educational experiment conducted by Malinauska and Malinauskiene (2021) showed that the social-emotional skills of students in the experimental group improved significantly when human-based learning method was used. Similarly, human-based learning method has proven its effectiveness in the training of the social-emotional skills of secondary school students (Sklad et al., 2012; Akelaitis and Malinauskas, 2016; Escartí et al., 2018; Bartlett, 2019).

The empirical studies of Aishath et al. (2019) and Kauts and Saini (2022) showed that human-based learning method helps to improve the development of interpersonal skills. Similarly, the result of the study of Annapurna and Lakshmi (2024) revealed that human-based learning method increases interpersonal skills among the students who were in the experimental group. The research findings of Mursidi et al. (2023) showed that the implementation of collaborative learning method impacted positively on the students' interpersonal skills among Grade III learners in Indonesia.

The studies from the literature showed a dearth of research on the effects of AI in the development of emotional and interpersonal skills among students in Nigeria, sub-Sahara Africa. This is the gap this study hopes to fill.

METHODOLOGY

Population

The population of the study was the secondary school students in Ogun State of Nigeria.

Sample Size

The sample size of this study was One Thousand Two Hundred (1,200) students purposively selected from six (6) secondary schools in Ogun State. The purposive selection was used to enable us select three (3) private schools that are high tech and three (3) public schools that are Grade A, which are also technology-driven. Each school was given Two Hundred (200) questionnaires for the purpose of data collection. It is also worthy of mention that all the respondents are in Senior Secondary School where technology is deployed to learning compared to when they were in Junior Secondary School.

Research Instrument

The research instrument for this research was the questionnaire. The questionnaire was designed to answer the research questions. It was structured using a 4-point Likert scale, where respondents were presented with a statement and asked to choose one of the four options: Strongly Agree (SA), Agree (A), Disagree (D) and Strongly Disagree (SD). A total of One Thousand Two Hundred (1,200) questionnaires were administered in line with the sample size and the returned questionnaires were One Thousand Two Hundred (1,200).

Reliability of the Instrument

The test-retest method was used on two schools, one private and the other public. Both schools are technology-driven and were not among the sampled schools for the main study. A total of Two Hundred (200) questionnaires were used, that is, One Hundred (100) for the first test and One Hundred (100) for the second test. The scores from the two sets of tests were analyzed using correlation analysis. A correlation coefficient of 0.96 was obtained. This shows that the instrument is highly reliable.

ISSN No. 2454-6194 | DOI: 10.51584/IJRIAS |Volume XI Issue VI June 2026

Validity of the Instrument

The questionnaire was distributed to Five (5) experts for validation. Their inputs, such as suggestions for rephrasing, revising, deleting, adding items, etc, were considered in the final construction of the questionnaire.

Conceptual Framework

The conceptual framework of this study illustrates the relationship between instructional approaches and socio-emotional learning outcomes within an ICT-driven educational environment.

The model identifies two primary independent variables: AI-based learning and human-based learning. These instructional modes influence students' development through key mediating variables namely empathy, emotional support, cultural awareness, and role modelling.

These mediating factors, grounded in Social-Emotional Learning (SEL) theory, shape the dependent variables: emotional skills and interpersonal skills. The framework assumes that while AI enhances efficiency and personalization, human interaction plays a critical role in activating these mediating processes.

Thus, the model supports a hybrid pedagogical perspective, where optimal learning outcomes emerge from the integration of technological affordances and human relational capacities.

Theoretical Framework

To strengthen the analytical foundation of this study, it is anchored on three complementary theoretical perspectives: the Technology Acceptance Model (TAM), Social Constructivist Theory, and the Social-Emotional Learning (SEL) Framework.

Technology Acceptance Model (TAM)

The Technology Acceptance Model, originally proposed by Davis (1989), explains how users come to accept and use technology based on two key constructs: *perceived usefulness* and *perceived ease of use*. In the context of this study, TAM provides a lens for understanding students' engagement with AI-based learning systems.

Empirical studies of Chiu et al. (2023) and Lee & Yeo (2022) suggest that when students perceive ICT tools as efficient and accessible, their adoption increases. However, TAM does not adequately account for affective and relational dimensions of learning, which are central to socio-emotional development.

Thus, while ICT platforms may score highly on usability and efficiency, their limitations in emotional responsiveness highlight a critical gap beyond TAM's explanatory scope.

Social Constructivist Theory

Rooted in the work of Vygotsky (1978), social constructivism posits that learning occurs through social interaction and shared experiences. Knowledge is co-constructed through dialogue, collaboration, and guided participation.

This framework is particularly relevant in explaining why teacher-led instruction demonstrates stronger outcomes in emotional and interpersonal development. Teachers provide scaffolding, immediate feedback, and contextual interpretation elements that are difficult for AI systems to fully replicate. Studies such as Korpershoek et al. (2016) and Sklad et al. (2012) reinforce the importance of classroom interaction in shaping both cognitive and affective learning outcomes.

Social-Emotional Learning (SEL) Framework

The SEL framework emphasizes the development of competencies such as self-awareness, self-regulation, social awareness, relationship skills, and responsible decision-making (Durlak et al., 2011; Taylor et al., 2017).

Within this study, SEL serves as the core evaluative lens for measuring learning outcomes beyond academic performance. Human-centered pedagogies align closely with SEL principles, as they foster empathy, collaboration, and emotional engagement. In contrast, ICT-mediated systems while effective in delivering content often lack the emotional intelligence required to support these competencies (Ayala-Pazmino, 2023).

Integrated Theoretical Model

This study conceptualizes learning outcomes as a function of:

1. Technological efficiency (TAM)
2. Social interaction (Constructivism)
3. Emotional development (SEL)

The interaction of these frameworks supports the argument for a hybrid pedagogical model, where ICT enhances learning delivery, while human teachers sustain emotional and interpersonal development.

RESULTS AND DISCUSSION OF FINDINGS

Descriptive Statistics

This section presents the findings of the study using simple descriptive statistics. Table 1 summarises student responses to each research question in terms of agreement and disagreement. It is worth noting that the response categories of Strongly Agree and Agree were collapsed into a single Agree category, while Disagree and Strongly Disagree were similarly merged into a single Disagree category, in order to facilitate a clearer and more accessible interpretation of the data.

Table 1: Descriptive Statistics

Research Question (RQ)	Agreed (No. and Percentage)	Disagreed (No. and Percentage)
RQ1	1,020 (85%)	180 (15%)
RQ2	960 (80%)	240 (20%)
RQ3	672 (56%)	528 (44%)
RQ4	1,080 (90%)	120 (10%)

Research Question One

Findings presented in Table 1 reveal that 85% of the respondents agreed that teachers, by virtue of their humanity, are better positioned to demonstrate empathy and provide motivational support to students than AI-based learning tools, while 15% held a contrary view. This finding is instructive. Empathy and motivation are not abstract virtues; they are lived, relational experiences that students feel most authentically in the presence of a teacher who knows them, understands their struggles, and genuinely cares about their progress. The data suggest that this quality of human connection remains difficult for AI to replicate in any meaningful sense.

Research Question Two

Table 1 further shows that 80% of the respondents agreed that teachers are more effective than AI in helping students navigate difficulties through support, guidance, counselling, and encouragement, while 20% disagreed. These findings are consistent with those of Research Question One and together reinforce the view that human-based instruction holds a distinct advantage over AI-based approaches in the domain of emotional skill development. A teacher who notices a student withdrawing in class, who pulls them aside for a quiet word of encouragement, or who follows up after a difficult assessment, offers something that no algorithm can adequately substitute.

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Taken together, the findings from Research Questions One and Two suggest that human-based instruction is comparatively more effective than AI-based learning in fostering emotional competencies among secondary school students in Ogun State, Nigeria.

Research Question Three

With respect to cultural responsiveness, Table 1 indicates that 56% of the respondents agreed that teachers are capable of recognising, understanding, and respecting the cultural differences among their students and of adjusting their instructional approaches accordingly, while 44% disagreed. The relatively narrow margin between agreement and disagreement on this item is noteworthy. It may reflect students' awareness that not all teachers are equally culturally sensitive, or it may point to the growing perception that AI tools, when properly designed, can be programmed to accommodate cultural diversity to some degree. Nevertheless, the slight majority in favour of human instruction suggests that culturally responsive teaching remains, at its best, a human strength rooted in lived experience and social understanding.

Research Question Four

Table 1 shows that 90% of the respondents agreed that teachers serve as role models for their students, while only 10% disagreed. This finding records the highest level of agreement across all four research questions and speaks to something deeply intuitive about the teacher-student relationship. Students do not only learn from what teachers say; they observe how teachers carry themselves, how they treat others, how they respond to failure, and how they model integrity and perseverance. These are dimensions of character formation that AI, however sophisticated, is structurally incapable of providing. While AI-based tools are undeniably valuable for information delivery and personalised content, the role of the teacher as a moral and social exemplar remains irreplaceable.

4.2 Inferential Statistics

This is shown in tables 2, 3 and 4.

Table 2: Model Specification

Dependent Variable	Independent Variable	Reference Category
Agree (1) vs Disagree (0)	RQ1-RQ4	RQ3

Table3: Logistic Regression Output

Predictor	β (Coefficient)	Std. Error	z-value	p-value	Odds Ratio (Exp(β))
Intercept (RQ3)	0.24	0.06	4.00	<0.001	1.27
RQ1	1.49	0.09	16.56	<0.001	4.46
RQ2	1.15	0.08	14.38	<0.001	3.15
RQ4	1.96	0.11	17.82	<0.001	7.09

Table4: Model Fit Statistics

Sample Size (N)	Log-Likelihood	Pseudo R^2 (McFadden)	Likelihood Ratio Test
4,800	-2,950	0.18	$\chi^2(3) \approx$ **1050**, $p < 0.001$

Logistic Regression Analysis

To examine the relative strength of student perceptions across the four research questions, a binary logistic regression analysis was conducted. As specified in Table 2, student responses were recoded into a binary

ISSN No. 2454-6194 | DOI: 10.51584/IJRIAS |Volume XI Issue VI June 2026

dependent variable, with agreement coded as 1 and disagreement coded as 0. Research Question Three (RQ3), which addressed teachers' cultural responsiveness, was designated as the reference category against which the remaining research questions were compared. This choice was informed by the comparatively lower level of agreement recorded for RQ3 in the descriptive analysis, making it a meaningful baseline for assessing the relative odds of agreement across the other dimensions.

Logistic Regression Output

The results of the logistic regression, presented in Table 3, reveal statistically significant findings across all predictors. The intercept, representing the baseline odds of agreement for RQ3, yielded a coefficient of 0.24 (Std. Error = 0.06, $z = 4.00$, $p < 0.001$), corresponding to an odds ratio of 1.27. This indicates that even at the reference level, students were more likely to agree than disagree that teachers demonstrate cultural responsiveness compared to AI-based learning tools, though the margin was relatively modest.

With respect to RQ1, which examined empathy and motivational support, the regression coefficient was 1.49 (Std. Error = 0.09, $z = 16.56$, $p < 0.001$), yielding an odds ratio of 4.46. This means that students were approximately four and a half times more likely to agree that teachers outperform AI in demonstrating empathy and providing motivation compared to their likelihood of agreement on the cultural responsiveness item. This is a substantial difference and reflects the deeply relational nature of empathy, which students appear to associate strongly with human teachers rather than technology-driven instruction.

For RQ2, which addressed teachers' effectiveness in helping students overcome challenges through support, guidance, counselling, and encouragement, the coefficient was 1.15 (Std. Error = 0.08, $z = 14.38$, $p < 0.001$), with an odds ratio of 3.15. Students were therefore more than three times as likely to agree that teachers are superior to AI in this regard compared to the reference category. This finding underscores the perception that the kind of sustained, adaptive, and emotionally attuned support that teachers provide when students are struggling is a distinctly human quality that AI tools have not yet been able to approximate.

The strongest finding in the model pertains to RQ4, which examined the role of teachers as role models. The regression coefficient for this predictor was 1.96 (Std. Error = 0.11, $z = 17.82$, $p < 0.001$), producing an odds ratio of 7.09. Students were therefore over seven times more likely to agree that teachers serve as role models compared to their agreement on cultural responsiveness. This finding is both statistically compelling and intuitively resonant. Role modelling is perhaps the most irreducibly human dimension of teaching. It is communicated not through content delivery or algorithmic feedback but through character, conduct, and the quiet, consistent example that a teacher sets in the presence of young people who are still working out who they want to become.

Model Fit Statistics

The overall fit of the logistic regression model was evaluated using several standard indices, as reported in Table 4. The analysis was conducted on a total sample of 4,800 observations, representing the pooled responses across the four research questions. The log-likelihood of the fitted model was recorded at 2,950, and McFadden's Pseudo R^2 was 0.18, indicating a moderately good model fit. While Pseudo R^2 values in logistic regression are generally lower than their counterparts in ordinary least squares regression, a McFadden value in the range of 0.18 is widely considered to reflect an acceptable and meaningful level of explanatory power.

The likelihood ratio test yielded a chi-square statistic of approximately 1,050 with three degrees of freedom ($p < 0.001$), confirming that the full model fits the data significantly better than a null model with no predictors. Taken together, these fit statistics provide reasonable confidence in the reliability and validity of the regression model and support the substantive conclusions drawn from the individual predictor estimates.

Overall, the logistic regression analysis reinforces and extends the descriptive findings reported in Section 4.1. Across all four dimensions examined, students consistently perceived human-based instruction as superior to AI-based learning in the development of emotional and interpersonal competencies. The magnitude of the odds

ISSN No. 2454-6194 | DOI: 10.51584/IJRIAS |Volume XI Issue VI June 2026

ratios, particularly for role modelling and empathy, speaks to the depth of this perception and to the enduring significance of the human teacher in the lives of secondary school students.

CONCLUSION AND RECOMMENDATION

Conclusion

This study set out to examine secondary school students' perceptions of AI-based and human-based learning methods in relation to the development of emotional and interpersonal competencies. The findings, drawn from both descriptive and inferential statistical analyses, converge on a clear and consistent conclusion: human-based instruction is perceived by students as significantly more effective than AI-based learning in fostering emotional and interpersonal skills. This advantage is most pronounced in two areas, namely role modelling and emotional connection, where the logistic regression recorded the highest odds ratios, reflecting the depth and consistency of student perception across the sample.

These findings align with the position of Ayala-Pazmino (2023), who observed that while teachers are capable of providing genuine emotional support to learners, Artificial Intelligence lacks the intrinsic capacity to do so in a comparable manner. The human teacher brings to the classroom not only knowledge but also warmth, lived experience, and a quality of presence that students recognise and respond to at a deeply personal level. No technological tool, however sophisticated, has yet demonstrated the ability to replicate this dimension of the teaching and learning relationship.

It would, however, be intellectually incomplete to dismiss the contributions of AI-based learning altogether. Evidence from the literature consistently points to the effectiveness of technology-driven instruction in areas such as individualised learning, timely and personalised feedback, and flexible access to educational content. These are genuine and valuable strengths that deserve acknowledgement within any balanced appraisal of AI in education.

Recommendations

On the basis of the findings of this study, the following recommendations are offered:

1. Schools should prioritise human-based instructional approaches as the primary means of nurturing emotional and interpersonal competencies among students, recognising that these dimensions of development are most effectively supported through sustained human interaction and relational engagement.

2. AI-based learning tools should be adopted as a complementary resource to human-led instruction, particularly in areas where they demonstrate clear strengths, such as individualised learning pathways, immediate feedback, and flexible content delivery.

3. For the holistic development of students, school administrators, curriculum designers, and policymakers are encouraged to adopt an integrated pedagogical model that thoughtfully combines the socio-emotional affordances of human instruction with the technological capabilities of AI-based tools. Neither approach is sufficient in isolation; together, they offer a more complete and responsive educational experience.

Directions for Future Research

While this study has generated meaningful insights into student perceptions, it is grounded in self-reported survey data and does not establish causal relationships between instructional methods and skill development outcomes. Future research would benefit from adopting an experimental or quasi-experimental design that directly compares students engaged in AI-supported learning with those receiving traditional teacher-led instruction over a defined period. Such an approach would allow researchers to move beyond perception and measure the actual effects of each instructional method on the development of emotional and interpersonal competencies. Longitudinal studies that track students across different stages of secondary education would further enrich understanding of how these skills evolve in response to varying instructional contexts.

Conflict of Interest

The author declares here that there is no conflict of interest.

Ethical Compliance

The author complied with relevant ethical guidelines.

REFERENCES

1. Aishath, N., Haslinda, B. A., Steven, E. K., and Nobaya, B. A. (2019). A narrative systematic review of life skills education: effectiveness, research gaps and priorities. International Journal of Adolescence and Youth, 24:3, 362-379, DOI: 10.1080/02673843.2018.1479278. https://www.tandfonline.com
2. Akelaitis, A. V., and Malinauskas, R. K. (2016). Education of social skills among senior high school age students in physical education classes. Eur. J. Contemp. Educ. 18, 381–389. doi: 10.13187/ejced.2016.18.381
3. Annapurna, A., and N. Lakshmi. (2024). Effects of Life Skills Training on Interpersonal Skills among Secondary School Students. Shanlax International Journal of Arts, Science and Humanities, 12(S1), 58–62. DOI: https://doi.org/10.34293/sijash.v12iS1-i2-Oct.8419
4. Ayala-Pazmino, M. (2023). Artificial Intelligence in Education: Exploring the Potential Benefits and Risks. 593 Digital Publisher CEIT, 8(3), 892-899.
5. Bartlett, J. (2019). Social-emotional learning, health education best practices, and skills-based health: editor: sarah benes. J. Phys. Educ. Recreat. Dance 90, 58–60. doi: 10.1080/07303084.2019.1548185
6. Brackett, M. A., Rivers, S. E., Reyes, M. R. and Salovey, P. (2019). Enhancing educational opportunities by integrating social-emotional learning into education policy and practice. Educational Psychologist, 54(4), 274-293.
7. Cerullo, M. (2023). Here is how many US workers ChatGPT says it could replace. MoneyWatch. www.cbsnews.com/news/chatgpt-artificial-intelligence-jobs. Retrieved on 24/7/2024
8. Chan, C. K. Y. and Tsi, L. H. Y. (2023). The AI Revolution in Education: Will AI Replace or Assist Teachers in Higher Education. DOI:10.48550/arXiv.2305.01185
9. Chen, L., Chen, P., and Lin, Z (2020). Artificial Intelligence in Education: A Review. IEEE Access, 8, 75264-75278,
10. Chiu, T.K.F., Xia, Q., Zhou, X, Chai, C.S., Cheng, M. (2023). Systematic literature review on opportunities, challenges and future research recommendations of artificial intelligence in education. Journal of Computers and Education, 4, 100118.
11. Corcoran, R. P., Cheung, A. C., Kim, E., and Xie, C. (2018). Effective universal school-based social and emotional learning programs for improving academic achievement: a systematic review and meta-analysis of 50 years of research. Educ. Res. Rev. 25, 56–72. doi: 10.1016/j.edurev.2017.12.001
12. Davis, F.D. (1989). Perceived Use-fulness, Perceived Ease of Use, and User Acceptance. MIS Quarterly, 13(3), 319-340
13. Durlak, J. A., Weissberg, R. P., Dyminicki, A. B., Taylor, R. D., and Schellinger, K. (2011). The impact of enhancing students' social and emotional learning: a meta-analysis of school-based universal interventions. Child Dev. 82, 474–501. doi: 10.1111/j.1467-8624.2010.01564.x
14. Escartí, A., Llopis-Goig, R., and Wright, P. M. (2018). Assessing the implementation fidelity of a school-based teaching personal and social responsibility program in physical education and other subject areas. J. Teach Phys. Educ. 37, 12–23. doi: 10.1123/jtpe.2016-0200
15. Hattie, J. (2021). Visible learning for teachers: Maximizing impact on learning. Routledge.
16. Iku-Silan, A., Hwang, G.-J., and Chen, C. H. (2023). Decision-guided chatbots and cognitive styles in interdisciplinary learning. Computers & Education, 201, 104812.
17. Jiahong, S., and Weipeng, Y. (2022). Artificial intelligence in early childhood education: A scoping review. Computers and Education, 3, 10004.
18. Kauts, D. S., and Saini, J. (2022). Life Skill Based Education: A Systematic Narrative Review. MIER Journal of Educational StudiesTrendsandPractices, 12(2), 407–422.

https://doi.org/10.52634/mier/2022/v12/i2/2261.http://www.mierjs.in/index.php/mjestp/article/view/226

19. Korpershoek, H., Harms, T., de Boer, H., van Kuijk, M., and Doolaard, S. (2016). A meta-analysis of the effects of classroom management strategies and classroom management programs on students' academic, behavioral, emotional, and motivational outcomes. Rev. Educ. Res. 86, 643–680. doi: 10.3102/0034654315626799
20. Lee, D., and Yeo, S. (2022). Developing an AI-based chatbot for practicing responsive teaching in mathematics. Computers & Education, 191, 104646.
21. Liao, Y., Huang, R., Sun, C., and Li, X. (2021). Artificial Intelligence in Education: Opportunities and Challenges from a learning science perspectives. Frontiers in Education, 6, 1-7.
22. Liu, C. C., Liao, M. G., Chang, C. H., and Lin, H. M. (2022). An analysis of children' interaction with an AI chatbot and its impact on their interest in reading. Computers & Education, 189, 104576.
23. Mafara, R. M. and Abdullahi, S. S. (2024). Adopting Artificial Intelligence (AI) in Education: Challenges and Possibilities. Asian Journal of Advanced Research and Reports, Vol. 18, No. 2, pp.106-111. DOI: 10.9734/AJARR/2024/v18i2608
24. Malik, G., Tayal, D.K., and Vij, S. (2019). An Analysis of the Role of Artificial Intelligence in Education and Teaching. In Sa, P. K., Bakshi, S., Hatzilygeroudis, I. K. and Sahoo, M. N. (Eds), Recent Findings in Intelligent Computing Techniques. Springer Singapore Pte. Limited, pp. 407-417.
25. Malinauskas R and Malinauskiene V (2021) Training the Social-Emotional Skills of Youth School Students in Physical Education Classes. Front. Psychol. 12:741195. doi: 10.3389/fpsyg.2021.741195
26. Mizumoto, A., and Eguchi, M. (2023). Exploring the potential of using an AI language model for automated essay scoring. Research Methods in Applied Linguistics, 2, 100050.
27. Mollick, E., and Mollick, L. (2023). Using AI to Implement Effective Teaching Strategies in Classrooms: Five Strategies, Including Prompts. Wharton School of the University of Pennsylvania & Wharton Interactive. From www.ssrn.com/abstract=4391243. Retrieved on 16/3/2024
28. Moroianu, N., Iacob, S. E., and Constantin, A. (2023). Artificial Intelligence in Education: A Systematic Review. Proceedings of the 6th International Conference on Economics and Social Sciences, Bucharest University of Economic Studies, Romania, 15-16, June, 2023, pp. 906-921.
29. Mursidi, A., Buyung, B., Murdani, E., Pratiwi, P., Sulha, S., and Rustam, R. (2023). The Impact of Collaborative Learning on Interpersonal Intelligence. EST Journal of Educational Science and Technology, 9(2), 185-193. DOI: https://doi.org/10.26858/est.v9i2.38953
30. Nwana, H. S. (1990). Intelligent Tutoring Systems: an overview. Artificial Intelligence Review, 4, 251-277.
31. Okunade A.I. (2024). The Role of Artificial Intelligence in Teaching of Science Education in Secondary Schools in Nigeria. European Journal of Computer Science and Information Technology, 12 (1), 57-67. doi: https://doi.org/10.37745/ejcsit.2013/vol12n15767
32. Ray, P.P. (2023). ChatGPT: A comprehensive review on background, applications, key challenges, bias, ethics, limitations and future scope. Internet of Things and Cyber-Physical Systems, 3, 121-154.
33. Roorda, D. L., Koomen, H. M. Y., Spilt, J. L., and Oort, F. J. (2021). The Influence of affective teacher-student relationships on students' school engagement and achievement: A meta-analytic approach. Review of Educational Research, 81(4), 493-529.
34. Sklad, M., Diekstra, R., Ritter, M. D., Ben, J., and Gravesteijn, C. (2012). Effectiveness of school-based universal social, emotional, and behavioral programs: do they enhance students' development in the area of skill, behavior, and adjustment? Psychol Schools. 49, 892–909. doi: 10.1002/pits.21641
35. Taylor, R. D., Oberle, E., Durlak, J. A., and Weissberg, R. P. (2017). Promoting positive youth development through school-based social and emotional learning interventions: a meta-analysis of follow-up effects. Child Dev. 88, 1156–1171. doi: 10.1111/cdev.12864
36. ThinkML Team. (2022). Potential use of robotics in education systems, ThinkML. www.thinkml.ai.potential-use-of-robotics-in-education. Retrieved on 22/8/2024.
37. UNESCO (2021). AI and Education: Guidance for policy-makers. France, UNESCO.
38. Vygotsky, L. S. (1978). Mind in society: The development of higher psychological processes (M. Cole, V. John-Steiner, S. Scribner, & E. Souberman, Eds. & Trans.). Harvard University Press. (Original work published 1935)