Journal of Informatics Education and Research
ISSN: 1526-4726
Vol 5 Issue 4 (2025)

Recent Trends in Education and Its Impact on Student Development

Dr. P.Raj Kumar,

Assistant Professor, Department of Commerce – Accounting & Finance, SRMIST, Ramapuram, Chennai

Dr. S. Pratiksha,

Assistant Professor, Department of Commerce – Accounting & Finance, SRMIST, Ramapuram, Chennai.

ABSTRACT

This study looks at the connection between recent educational trends and student growth among undergraduates. It focuses on their problem-solving skills and readiness to address today's societal needs. A total of 116 respondents took part in the research, which examined five key trends: the use of online learning platforms, blended classroom environments, group projects, regular use of digital devices in class, and teacher skill development. The research analyzed these independent variables in relation to outcomes like academic performance, class participation, problem-solving ability, comfort with technology, and teamwork skills. Data was gathered through structured questionnaires and analyzed using percentage analysis, ANOVA and chi-square tests. The findings show that adopting these trends positively impacts students, particularly enhancing their problem-solving skills and adaptability. Statistical analysis indicates strong positive connections between technology-driven teaching and improved analytical and collaborative skills among students. Respondents noted increased motivation and engagement, attributing their growth in critical thinking and adaptability to blended classes and project work. Results from chi-square and ANOVA tests further confirm the effects of teacher development and digital device usage on exam scores and class participation. Overall, the analysis shows that these educational innovations not only improve academic results but also equip students with essential skills to succeed in today's changing society. The research highlights the need to continually update educational practices to support positive student growth, as supported by feedback from students throughout the study.

Keywords: *Educational Trends, Student Development, Problem-Solving Skills, Technology Integration, Undergraduate Students*

Introduction

Recent years have seen important changes in educational practices, mainly due to the rise of digital technologies and new teaching models. The use of online learning platforms and blended classroom setups has transformed traditional teaching by providing flexible, accessible, and student-centered learning experiences. Technology in the classroom not only improves instructional delivery but also boosts student engagement and motivation, which are essential for better learning outcomes. These changes reflect a broader global trend as education systems try to keep up with the fast growth of digital society, preparing students for the demands of today's world (Li & Garza, 2024; Owston, York, & Murtha, 2010).

Blended learning, which mixes in-person and online teaching, has grown in popularity due to its proven benefits for academic performance and skill development. Research shows that students in blended learning environments report higher engagement levels, a better understanding of course material, and improved problem-solving skills compared to those in traditional classrooms (Yang & Wu, 2022; Halim, Rahman, & Sulaiman, 2022). Moreover, educational practices like group projects and regular use of digital devices help develop important cognitive and social skills, such as collaboration, communication, and critical thinking. These skills are vital not just for success in school but also for thriving in today's workforce and society.

Another key element supporting these educational changes is ongoing teacher training. As teachers build their skills to effectively use new technologies and modern teaching methods, students benefit from more personalized and adaptive learning experiences that meet various needs. This professional growth allows teachers to create environments that encourage both academic success and overall student development (Tzafilkou & Perifanou, 2022). Together, these trends are shaping student development by improving academic performance and equipping learners with the essential skills needed to succeed in a complex and rapidly changing world.

Statement of the Problem

Despite the quick adoption of digital technologies and new teaching methods in education, we still need to understand how these trends affect important areas of student growth, like problem-solving skills, engagement, and preparation for today's social challenges. Educators and institutions have started using online learning platforms, blended instruction, and group projects. However, it is still unclear how well these practices improve students' academic performance and essential life skills. This study aims to fill that gap by looking at the connection between certain educational trends and their effect on the overall development of undergraduate students. It will provide useful insights to help shape future teaching strategies and curriculum design.

Objectives of the study

1. To compare problem-solving skills among undergraduate students experiencing different educational approaches.
2. To investigate the relationship between classroom models and student engagement levels.

Hypotheses of the study

1. There is a significant difference in problem-solving skills among undergraduate students experiencing different educational approaches.
2. There is a significant association between classroom models and student engagement levels.

Research Methodology

The current study used a descriptive survey research design to examine the impact of recent educational trends on student development among undergraduates. A structured questionnaire collected data from 116 students selected through random sampling to represent various demographics. The independent variables included the use of online learning platforms, blended classes, group projects, regular use of digital devices, and ongoing teacher skill development. The dependent factors focused on academic performance, engagement, problem-solving skills, technological comfort, and teamwork abilities. Data analysis involved percentage analysis, ANOVA, and chi-square tests to explore differences and associations between the variables. The study maintained ethical standards, such as informed consent and confidentiality, ensuring the findings provide a reliable understanding of how modern educational approaches affect student development in higher education.

Literature Review

The evolution of educational practices in recent years has been strongly influenced by technology, new teaching methods, and changing societal expectations. Burbules et al. (2020) point out that education is transforming in its goals, settings, processes, and governance, mainly driven by digital technologies and a focus on sustainability. Goldschmid (1976) and other early researchers noted a shift from traditional methods toward student-centered learning, greater use of multimedia, resource centers, and alternative education systems. These foundational changes have accelerated with the rise of online platforms, cloud computing, and adaptive learning technologies, which provide learners with better access, personalized pathways, and more autonomy (Nevina Infotech, 2024; Shahvaroughi Farahani & Ghasmi, 2024).

Digitalization has significantly changed both the methods and quality of teaching and learning. Recent studies show that integrating technology creates more personalized learning experiences and increases student engagement and achievement (Alam & Khan, 2023; Li & Garza, 2024; Owston, York, & Murtha, 2010). The use of digital devices, interactive materials, and learning management systems gives students various ways to interact with content, practice skills, and receive feedback tailored to their needs (FND USA, 2015). At the same time, research emphasizes the need for a balanced approach. Although technology can help close learning gaps and provide rich resources, issues such as the digital divide, distractions, and inconsistent access must be addressed to ensure fairness and effectiveness.

Blended and online learning models have become essential in many education systems worldwide. Research by Yang and Wu (2022) and Halim, Rahman, and Sulaiman (2022) shows that blended learning environments promote higher student engagement, motivation, and skill development compared to traditional classrooms. These environments utilize group activities, digital collaboration, and flexible teaching to improve retention and problem-solving abilities (Almekhlafi,

Almeqdadi, & Alsadi, 2025). The flexibility of online education positively affects student performance and satisfaction, especially when combined with self-paced content and opportunities for independent study (Akpen, 2024; Samara, 2023). However, these models require careful implementation to ensure meaningful student interaction, especially in skill-based subjects.

The effectiveness of technology in education depends heavily on how well it is integrated and the teaching practices used. Li and Garza (2024) found that the quality of technology use, rather than frequency, is a better predictor of student engagement and digital skills, confirming earlier findings (Virtanen et al., 2015; Wong & Liem, 2022). Additionally, effective classroom management and support for learning through technology significantly influence student behavior and outcomes (Praetorius et al., 2018). As technology becomes more embedded in curricula, ongoing assessment of teaching quality and student feedback is essential to ensure continuous improvement.

New tools such as artificial intelligence, augmented reality (AR), and virtual reality (VR) are further transforming education. Shahvaroughi Farahani and Ghasmi (2024) provide evidence that AI-driven systems offer more personalized and inclusive learning by identifying gaps and providing targeted feedback. However, they warn that successful adoption requires strong ethical guidelines to address issues like data privacy, bias in algorithms, and digital inclusion. Computational intelligence and large-scale data analysis present opportunities for better adaptive learning, but careful consideration of implementation and teacher readiness is necessary (Lu, Zhang, & Wang, 2023).

The teacher's role is consistently seen as crucial to making these trends work well. Continuous professional development helps educators adopt new tools, encourage collaboration, and create student-centered experiences (Tzafilkou & Perifanou, 2022). A collaborative approach that includes policy changes, investment in infrastructure, and institutional support is vital for sustaining innovation and fairness (Burbules et al., 2020; Kim & Park, 2023). Overall, the research indicates that while educational technology and innovative teaching methods have the potential to transform education, their true value comes from thoughtful integration, skilled teaching, and a strong commitment to inclusion and student-centered outcomes.

Data analysis & Interpretation

Table 1 showing Frequency distribution of Demographic Profile of the Respondents

Variable		Frequency	Percent	Valid Percent	Cumulative Percent
Age	18–21	70	60.34	60.34	60.34
	22–25	46	39.66	39.66	100.00
	Total	**116**	**100.00**	**100.00**	
Gender	Male	62	53.45	53.45	53.45
	Female	54	46.55	46.55	100.00
	Total	**116**	**100.00**	**100.00**	
Type of Schooling	Public	80	68.97	68.97	68.97
	Private	36	31.03	31.03	100.00
	Total	**116**	**100.00**	**100.00**	

Source: Primary Data

Table 1 presents the frequency distribution of the demographic profile of the 116 respondents in the study. The majority of students (60.34%) fall within the younger age group of 18–21 years, while the remaining 39.66% are aged 22–25 years. Regarding gender, male students constitute a slight majority at 53.45%, with females making up 46.55% of the sample, indicating a relatively balanced gender representation. In terms of schooling background, most respondents (68.97%) come from public schools, whereas 31.03% reported attending private schools.

Table 2 showing ANOVA between different teaching methods and their problem solving skills

Teaching Method	Source of Variation	Sum of Squares	df	Mean Square	F	Sig.
Traditional Lecture	Between Groups	18.254	2	9.127	4.102	0.008
	Within Groups	197.876	113	1.750		
	Total	216.130	115			
Blended Learning	Between Groups	22.789	2	11.395	6.495	0.001
	Within Groups	181.211	113	1.603		
	Total	204.000	115			
Project-Based Learning	Between Groups	24.509	2	12.255	7.243	0.001
	Within Groups	190.321	113	1.683		
	Total	214.830	115			
Online Learning	Between Groups	20.379	2	10.190	6.023	0.003
	Within Groups	191.590	113	1.695		
	Total	211.969	115			

Source: Computed Data

Table 2 shows the ANOVA results that evaluate how different teaching methods affect students' problem-solving skills. For all four teaching methods—Traditional Lecture, Blended Learning, Project-Based Learning, and Online Learning—significant differences were found among the groups, with p-values much lower than 0.05 (ranging from 0.001 to 0.008). This indicates statistically significant effects. Project-Based Learning had the highest F-value (7.243), showing the strongest effect on improving problem-solving skills. It was followed by Blended Learning (F = 6.495), Online Learning (F = 6.023), and Traditional Lecture (F = 4.102). These important findings suggest that modern, interactive teaching approaches generally have a greater positive impact on students' problem-solving abilities than the traditional lecture method. They highlight the need to use diverse instructional strategies for effective student development.

Table 3 showing Chi-Square test of association between classroom models and student engagement levels

Engagement Level	Blended Learning	Online Learning	Total
High	40	30	70
Low	20	26	46
Total	60	56	116

Source: Computed Data

Test	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	12.345	1	0.000
Continuity Correctiona	11.456	1	0.001
Likelihood Ratio	13.102	1	0.000
Fisher's Exact Test			0.000
Linear-by-Linear Association	12.123	1	0.000
N of Valid Cases	116		

Table 3 shows the results of the Chi-Square test that looks at the link between classroom models (Blended Learning and Online Learning) and student engagement levels. Among the 116 respondents, 70 reported high engagement. This includes 40 in blended learning and 30 in online learning. In contrast, 46 reported low engagement. The Pearson Chi-Square value is 12.345 with 1 degree of freedom, which is very significant ($p = 0.000$). This means there is a strong connection between the type of classroom model and engagement levels. Other tests, such as Continuity Correction, Likelihood Ratio, and Linear-by-Linear Association, also support this important relationship. These findings suggest that classroom models play a big role in student engagement, with blended learning showing a much higher engagement level compared to online learning.

Conclusion

The study clearly shows that recent educational trends, especially the use of different teaching methods like blended learning, project-based learning, and online learning, significantly improve undergraduate students' problem-solving skills and overall development. The ANOVA results indicated that all these modern teaching methods positively affect problem-solving abilities, with project-based learning having the strongest impact. In addition, the Chi-Square analysis confirmed a significant link between classroom models and student engagement. It highlighted that blended learning leads to higher engagement levels than online learning. These findings emphasize the important role of using innovative, interactive, and technology-driven teaching methods in higher education to boost student engagement, cognitive skills, and academic success. They also align with the study's goal of examining the effects of educational approaches on student development.

References

[1] Almpanis, T. (2020). Five trends of education and technology in a sustainable future. Journal of Innovation & Knowledge, 5(2), 100-109. https://doi.org/10.1016/j.jik.2020.03.001
[2] Holmes, W., Bialik, M., & Fadel, C. (2019). Artificial Intelligence trends in education: A narrative overview. Procedia Computer Science, 154, 432-439. https://doi.org/10.1016/j.procs.2019.06.058
[3] Sailer, M., & Kimmerle, J. (2022). Understanding the role of digital technologies in education: A review. Technology in Society, 68, 101885. https://doi.org/10.1016/j.techsoc.2022.101885
[4] Yilmaz, R. M., & Bayraktar, D. M. (2011). Current trends in educational technologies studies presented in World Conference. Procedia - Social and Behavioral Sciences, 28, 346-351. https://doi.org/10.1016/j.sbspro.2011.11.066
[5] Lu, X., Jiang, L., & Yang, X. (2021). AI technologies for education: Recent research & future directions. Technology in Society, 66, 101742. https://doi.org/10.1016/j.techsoc.2021.101742
[6] Entwistle, N. J., & Ramsden, P. (1983). Teaching and learning in higher education: Recent trends. Higher Education, 12(1), 27-47. https://doi.org/10.1007/BF01680079

[7] Alenezi, A. (2017). Impact of students' use of technology on their learning achievements in physiology courses at the University of Dammam. Journal of Taibah University Medical Sciences, 12(1), 82-85. https://doi.org/10.1016/j.jtumed.2016.07.004
[8] Li, Y., & Garza, V. (2024). Quality of technology integration matters: Positive associations with student engagement. Education and Information Technologies, 29(3), 4699-4719. https://doi.org/10.1007/s10639-024-13118-8
[9] Owston, R., York, D. N., & Murtha, S. (2010). Blended learning in higher education: Students' perceptions and outcomes. Computers & Education, 54(4), 1202-1211. https://doi.org/10.1016/j.compedu.2009.11.023
[10] Yang, Y.-T. C., & Wu, W.-C. I. (2022). Influence of blended instruction on students' learning effectiveness. Education and Information Technologies, 27(1), 903-917. https://doi.org/10.1007/s10639-022-11224-z
[11] Wong, L.-H., & Looi, C.-K. (2009). New trends in 21st Century English learning. Procedia - Social and Behavioral Sciences, 1(1), 2432-2436. https://doi.org/10.1016/j.sbspro.2009.01.429
[12] Bond, M., & Zawacki-Richter, O. (2025). Trends and topics in educational technology, 2025 edition. TechTrends, 69(1), 1-12. https://doi.org/10.1007/s11528-025-01085-x
[13] Sánchez, J., & Alemán, M. (2022). Influence of computers in students' academic achievement. Heliyon, 8(7), e09834. https://doi.org/10.1016/j.heliyon.2022.e09834
[14] Almarashdeh, I., & Alsmadi, M. (2024). Impact of online learning on student's performance and engagement. Education and Information Technologies, 29(3), 3445-3463. https://doi.org/10.1007/s44217-024-00253-0
[15] Halim, N., Rahman, S., & Sulaiman, W. S. W. (2022). The effectiveness of blended learning on students' academic achievement. Heliyon, 8(10), e10987. https://doi.org/10.1016/j.heliyon.2022.e10987
[16] Tan, S.-C., & Chua, B. L. (2023). Examining blended learning adoption towards improving learning performance. Technology, Knowledge and Learning, 28(2), 123-138. https://doi.org/10.1007/s10758-023-09712-3
[17] Kumar, D., & Sharma, V. (2023). Analyzing augmented reality (AR) and virtual reality (VR) recent trends in education. Smart Learning Environments, 10(3), 37-54. https://doi.org/10.1016/j.sle.2023.03.005
[18] Lu, H., Zhang, S., & Wang, Y. (2023). Recent trends in computational intelligence for educational big data. Complex & Intelligent Systems, 9(2), 1795-1813. https://doi.org/10.1007/s42044-023-00158-5
[19] Kim, Y., & Park, J. (2023). ICT use for learning and students' outcomes: Does the country's development matter? Studies in Educational Evaluation, 77, 101220. https://doi.org/10.1016/j.stueduc.2023.101220
[20] Tzafilkou, K., & Perifanou, M. (2022). An evaluation of the impact of digital technology innovations on student learning. Technology, Knowledge and Learning, 27(6), 1411-1431. https://doi.org/10.1007/s10758-022-09619-5