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Emerging Trends in Education: Evaluating the Benefits and Potential Risks for Student Learning and Well-being

Muhammad Javid [1] Fahad Maqbool [2] Rukhsana Yahya [3] Rashid Latif [4]

[1] PhD Scholar, Department of Educational Research and Assessment, University of Okara, Okara, Punjab, Pakistan.
✉ muhammadjaved.bsp@gmail.com

[2] Assistant Professor, Department of Educational Research and Assessment, University of Okara, Okara, Punjab, Pakistan.
✉ Mianfahad11@uo.edu.pk

[3] PhD Scholar, Department of Educational Research and Assessment, University of Okara, Okara, Punjab, Pakistan.
✉ ruksana.yahya2446@gmail.com

[4] PhD Scholar, Department of Educational Research and Assessment, University of Okara, Okara, Punjab, Pakistan.
✉ rashidlatifsipra58@gmail.com

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Abstract: The purpose of this study was to assess how Emerging Trends in Education affect students' learning, well-being, and potential risks. The study has a descriptive approach, and the researcher used a quantitative methodology to investigate the relationship and impact between different variables (students' learning, well-being, and potential risks to students). The study population included all public universities in Punjab, with the University of Okara selected via convenience sampling. A survey using a 5-point Likert scale was conducted among 505 students (283 males, 222 females), and data were analyzed using SPSS and Microsoft Excel. Descriptive and inferential statistics were used to analyze the data. Pearson correlation assessed the relationship between emerging trends (technology integration) and student learning/well-being, while linear regression examined its effects. Independent sample t-tests and ANOVA evaluated differences based on demographic variables (gender, age, and location). The study found a positive impact of emerging trends (technology integration) on student learning, well-being, and potential risks, with significant differences based on demographic variables (gender, age, and location). It recommends that educators and policymakers adopt balanced technology integration, ensuring efficiency while addressing potential risks.

Keywords: Emerging Trends, Technology Integration, Benefits, Well-Being, Potential Risks

Corresponding Author:
Muhammad Javid
PhD Scholar, Department of Educational Research and Assessment, University of Okara, Okara, Punjab, Pakistan.
✉ muhammadjaved.bsp@gmail.com

Introduction

An emerging trend in education refers to a new or evolving practice, technology, or approach that is gaining traction in the educational field (Burbules et al., 2020). The growing incorporation of technology in education has transformed teaching and learning processes worldwide (Rahimi & Oh, 2024). In Pakistan, most people, especially the female diaspora, consider the teaching profession as a respected profession (Kamran & Shahbaz, 2019). Digital technologies and platforms have become crucial in the classroom and are raising accessibility, participation and learning outcomes from students (Haleem et al., 2022). There are many advantages to technology: a customized learner experience, easy access to information, and skills-embedded opportunities for students who need to meet modern standards (Chee & Sanmugam, 2023). Regardless of these benefits, the widespread use of technology creates serious risks. Prolonged screen time, digital distractions, and an overreliance on electronic tools can all have a negative impact on pupils' cognitive, emotional, and social development (Clemente-Suárez et al., 2024). The independent variable in this study is emerging trends in education: new or changing educational practices and technologies. The dependent variables consisted of student learning (academic achievement) and student well-being (mental, emotional, and social health). The pros and cons of these trends were also motivational to the extent that they influenced student learning and

well-being. This study aims to give educators, policymakers, and stakeholders practical insights by investigating its impact on kids' academic achievement and general well-being. The findings will help to design evidence-based methods for maximizing the benefits of educational technology while minimizing its negative consequences.

Rationale of Study

Technology has the potential to improve academic performance and offer creative learning opportunities, but it may also increase digital distractions, widen the digital gap, and harm students' physical and emotional well-being. After reviewing the literature, the researcher discovered that a lot of studies have been conducted across the globe, but there has been a lack of studies in Pakistan. As an underdeveloped nation with a system of education that requires modifications and enhancements to catch up with other developed countries, it is appealing to point out that very few researchers have attempted to research the impact of technology integration in education at higher levels. In Pakistan, many studies have been undertaken on the relationship between technology integration and students' achievement at the secondary and higher secondary levels, but none have been conducted on students' academic performance at the university level. This research project attempted to address the gap in the research literature related to "Emerging Trends in Education: Evaluating the Benefits and Potential Risks for Student Learning and Well-being."

Purpose of the Study

The primary purpose of the present study was to examine the effects of technology-enhanced learning on students' learning and well-being. More specifically, it sought to assess how technology was affecting the learning and well-being of students, uncover the effects of technology on learning and well-being, and gauge the perceived risks that society was associating with students, such as distractions, privacy and security issues, and technology dependency. Moreover, it was aimed at investigating the differences in the effect of technology integration on students' learning and well-being according to some demographic variables such as gender, age, and locality. The hypotheses that were subjected to testing were H01 (There is no significant relationship between technology integration and students' learning and well-being), H02 (There is no significant effect of technology integration on students' learning and well-being), H03 (Technology integration did not significantly influence possible risks for students) and H04 (There is no statistically significant difference in the effect of technology integration on students' learning and well-being based on demographic information like gender, age and locality).

Significance and Implications of the Study

In multiple respects, this study is significant. It delivered key data on the impact technology integration had on students' well-being and academic success. It further observed the potential hazards of using technology in the class. In addition, the research helped to deepen understanding and refine theory as well as application practices in education. It took in tests and technologies for instructional guided future research that was experimental in nature and promoted good, effective learning on behalf of learners. Our study also had an impact on educational policy and practice. It contributed valuable insights that allowed teachers to choose digital tools which would promote learning while enabling risk management. It apprised legislators of linking the electronic gap and ensuring tech services were universally available for all citizens. It helped parents to support their children's education and welfare with technology. Finally, this was an important study in ensuring that technology-assisted rather than hindered the whole-person development of students.

Delimitations of the Study

Delimitations are the traits the researcher uses to classify the study boundaries (Wu, 2024). A study with no boundaries is neither practical nor precise. Lack of time and other resources limited the scope of the present study.

1. The study only evaluates the relationship between technology integration and students' learning and students' well-being.
2. The study only included male and female students at the University of Okara in the Punjab region.
3. The study developed a questionnaire as the sole instrument for data collection.

Literature Review

Technology integration in education is the planned and successful use of technology tools, resources, and approaches in the teaching and learning process (Yılmaz, 2021). Technology integration strives to improve existing educational techniques by making them more interactive, relevant, and responsive to the demands of 21st-century learners (Thelma et al., 2024). Relying on forums like Moodle, Blackboard or Canvas (Learning Management Systems (LMS)), digital learning, for the most part, just means you can access course materials, turn in assignments, and communicate with your teachers and classmates. These platforms, including Learning Management Systems (LMS) like Moodle, handle everyday tasks that are not the responsibility of all users (Devi & Aparna, 2020). Furthermore, tools such as Google Docs for online collaboration and Zoom or Microsoft Teams live video platforms are now increasingly important in encouraging student cooperation between schools (Hlazunova et al., 2024).

Over the past few decades, Pakistan's history of technology integration has undergone substantial change, particularly as the importance of digital transformation in education has grown (Sain et al., 2024). In the latter part of the 1990s, the Pakistani government began investigating the use of ICT in education. At first, the emphasis was on improving technical skills and literacy by establishing basic IT infrastructure, mostly in metropolitan regions (Shaikh & Khoja, 2011). However, there was little access to digital learning, and there was still a significant digital gap between urban and rural communities. In the early 2000s, some colleges started experimenting with e-learning, offering online courses in certain subjects as well as virtual education programs. In 2004, the Higher Education Commission (HEC) started a number of programs, including the Digital Library Program, which gave universities nationwide access to thousands of digital academic materials (Jamil & Muschert, 2024). A key player in advancing online education nationally, the Virtual Institution of Pakistan (VUP) was founded in 2002 and was the first institution in Pakistan to provide online courses and degree programs.

The age of digital learning has just begun, and smartphones and high-speed Internet have had a major impact. Utilizing collaboration with global groups to provide online training for teachers in areas like digital teaching is a landmark for HEC education (Siddiqui & Batool, 2022). In Pakistan, the COVID-19 outbreak served as a spur for online education. "Schools, colleges and institutes are all becoming more dependent on distance learning (Iqbal et al., 2022)." As a result of modern technology, the HEC and other organizations, including Google Classroom and Microsoft Teams, now provide opportunities for online study. In response to the educational needs of children in Pakistan without broadband access, Pakistan Television (PTV) has created a special educational channel known as "Teleschool" (Niaz et al., 2023). To close the education gap, a number of online learning platforms, like Edkasa and Knowledge Platform, increased the scope of their offerings by adding live lectures, tests, and instructional videos (Quainoo, 2021). Modern education has seen a significant transformation thanks to digital learning, which has changed teaching strategies, learning opportunities, and the educational environment as a whole (Mohamed Hashim et al., 2022). The old educational paradigm is adapting to the demands of a world that is changing quickly thanks to the incorporation of digital technology (Rodney, 2020).

Research Methodology

Research methodology is a technique that directs the investigator from start to finish on questions concerning how the study should be conducted and key procedures to be followed (Kumar, 2018). We conducted the study using a quantitative research method. The quantitative research method focuses on measuring things objectively and includes analyzing data collected from polls, questionnaires, and surveys, as well as using existing statistical data. Research design refers to the overall method used to achieve study objectives (Arbale & Mutisya, 2024). A cross-sectional survey approach will be used in this quantitative study to investigate how technology integration affects students' academic achievement and well-being. This approach gathers information simultaneously from a wide range of participants. Structured questionnaires will gather data on the dependent variables (well-being and academic achievement) and the independent variable (technology integration).

Population, Sampling Technique, and Sample Size

Lesko et al. (2017) define a population as a group of people with specific characteristics that allow for the generalization of study results. The study's population comprised all male and female university-level students in the Punjab province, whereas the accessible population included all male and female students of the University of Okara. Sampling is the process of selecting a subset of participants from a larger population. It would be impossible for researchers to collect data from the whole population owing to time and budgetary constraints. As a result, researchers employ non-probability convenience sampling approaches to acquire accurate data within a certain time and budget (Hossan et al., 2023). Aljumah (2023) claims that establishing the sample size is critical for any empirical study seeking to deduce the whole population. The table below illustrates the details of the selected sample. The study included 505 students (283 males and 222 females) from the University of Okara.

Table 1

Gender-Wise Classification of the Respondents

Gender	Frequency	Percentage
Male	283	55
Female	222	44
Total	505	100.0

Instruments of the Study

The use of proper research equipment is a basic necessity for carrying out any research project. The researchers developed a comprehensive questionnaire comprising three dimensions. These dimensions, encompassing the technology integration scale (8 questions), the students' learning and well-being scale (12 questions), and the potential risks scale (12 questions), aimed to capture a holistic view of student experiences. This multi-dimensional approach allowed for the analysis of relationships between these factors, ultimately leading to a more profound understanding of how they influenced university students. The purpose of validation is to evaluate if the research instruments are appropriate for the area of study, whether they cover all relevant components, and whether they adhere to a well-organized, systematic pattern (Singha & Yogesh, 2025). The researcher consulted the research supervisor, experienced academics, and subject-matter specialists to ensure the validity of the instruments. Because of their feedback, several item statements and locations were altered, and a few things were removed. During the pilot study, we established the instrument's reliability by administering it in a non-sample region. A pilot study was conducted before the questionnaire statements were actually delivered. The researcher's questionnaires included twenty-five (25) non-sample students for this reason. Students were given questionnaires, and statistical analysis was performed on their responses.

Table 2

Reliability Analysis

Scales	Mean	Alpha
Technology Integration Scale	3.928	.910
Students' Learning and Wellbeing Scale	3.751	.870
Potential Risks Scale	3.873	.865

Findings

Descriptive Statistics

Table 3

Mean of Technology Integration (Factors)

Factors	N	Mean	Std. Deviation
Accessibility of Technology	505	4.62	.635
Effective Use in Teaching	505	4.52	.563

Table 3 describes the descriptive statistics for digital learning (factors). According to the analysis, digital learning has the following mean values: Accessibility of Technology resources (mean = 4.62) and Effective Use in Teaching (mean = 4.52).

Table 4

Mean of Students' Learning and Wellbeing (Factors)

Variables	N	Mean	SD
Academic Performance	505	4.38	.628
Collaboration and Communication	505	4.36	.635
Motivation and Engagement	505	4.34	.637

Table 4 describes the descriptive statistics for students' learning and well-being (factors). The analysis exposes the mean values of students' learning and well-being (factors), respectively: academic performance (mean = 4.38), time collaboration and communication (mean = 4.36), and motivation and engagement (mean = 4.34).

Table 5

Mean of Students' Potential Risks (Factors)

Variables	N	Mean	SD
Distractions	505	3.39	.628
Dependence on Technology	505	3.43	.635
Privacy and Security Concerns	505	3.30	.637

Table 5 describes the descriptive statistics for students' potential risks (factors). The analysis exposes the mean values of students' potential risks (factors), respectively: distractions (mean = 3.39), dependence on technology (mean = 3.43), and privacy and security concerns (mean = 3.30).

Inferential Statistics

Testing of Null Hypothesis

Table 6

Correlation between Technology Integration and Students' Learning and Wellbeing

Variables	N	Mean	SD	r-value	Sig. (2-tailed)
Technology Integration	505	4.57	.436	.405**	.000
Students' Learning and Wellbeing	505	4.36	.621		

According to Table 6, the correlation coefficient (r) between technology integration and students' learning and wellbeing is 0.405, indicating a favorable relationship among the variables. The association was statistically significant, as indicated by a P-value of 0.000 <.01. Therefore, $H_0$1 was rejected.

Linear Regression Model

Table 7

Impact of Technology Integration on Students' Learning and Wellbeing

Hypothesis	Regression Weights	Beta Coefficient	R-squared	F-value	P-value	Hypothesis Supported
$H_0$2	TI ➡ SLAWB	.405	.164	79.027	.000	No

a) Predictors: Technology Integration (TI)

b) Dependent Variable: Students' Learning and Wellbeing (SLAWB)

There was a significant correlation between the variables, with a significant value (P-value = 0.000 < 0.05). The coefficient of determination (R-square) value was 0.164, which means that the independent variable causes a 16.4%

change in the dependent variable. Furthermore, the beta coefficient value was 0.405, which indicates a positive impact of technology integration on students' learning and wellbeing, and it was determined that when technology integration increases by one unit, the students' learning and wellbeing also increases by 0.40 units. Therefore, $H_0 2$ was rejected.

Table 8

Relationship and Regression between the Factors of Technology Integration and Factors of Students' Learning and Wellbeing

	Factors of Students' Learning and Wellbeing		
Factors of Technology Integration	Academic Performance	Engagement and Motivation	Collaboration and Communication
Accessibility of Technology	p-value = .000 r-value= .412** R^2= .170 β = .412	p-value = .000 r-value =.366** R^2= .134 β = .366	p-value = .000 r-value = 198** R^2= .039 β = 198
Effective Use in Teaching	p-value = .000 r-value= .459** R^2= 0.210 β = 0.459	p-value = .000 r-value = .409** R^2= .168 β = .409	p-value = .000 r-value = .212** R^2= .045 β = .212

The correlation and regression analysis between the two factors of technology integration and three factors of students' learning and wellbeing are shown in Table 8. All factors had a significant and positive correlation with one another (p = 000 < 01). It was also found that there was a positive effect of accessibility of technology on all factors of students' learning and wellbeing. 1. Academic Performance (p-value =.000, r-value =.412**, =.170, β =.412). 2. Engagement and Motivation (p-value =.000, r-value =.336**, = 0.134, β = 0.336). 3. Collaboration and Communication (p-value =.000, r-value =.198**, =.039, β =.198).

The analysis of the above table also shows that there was a positive effect of effective use in teaching on all factors of students' learning and wellbeing. 1. Academic Performance (p-value =.000, r-value =.459**, =.210, β =.459). 2. Engagement and Motivation (p-value =.000, r-value =.409**, = 0.168, β = 0.409). 3. Collaboration and Communication (p-value =.000, r-value =.212**, =.045, β =.212).

Table 9

Relationship and Regression between the Factors of Technology Integration and Factors of Students' Learning and Wellbeing

	Factors of Students' Learning and Wellbeing		
Factors of Technology Integration	Academic Performance	Engagement and Motivation	Collaboration and Communication
Accessibility of Technology	+	+	+
Effective Use in Teaching	+	+	+

Table 10

Impact of Technology Integration on Potential Risks of Students'

Variables	N	Beta Coefficient	R-Squared	Pearson 'r'	F-value	P-value
Technology Integration	505	.411	.169	.411	82.046	.000
Potential Risks to Students'	505					

Table 10 indicates the value of Pearson 'r' =.411** and p =.000<0.01, which shows a low positive relationship between variables. The value was 0.169, which means that technology integration causes a 16.9% change in potential risks to students. Furthermore, the beta coefficient was 0.411, which indicates a positive effect of technology integration on the potential risks of students, and it was determined that when technology integration increases by one unit, the potential risks of students also increase by 0.41 units.

Table 11

Differences on the Basis of Gender

Gender	N	Mean	Std. Deviation	t-value	df	Sig. (2-tailed)
Male	283	4.39	.620	1.180	603	.009
Female	222	4.32	.623			

The difference is significant at the 0.05 level (2-tailed).

The null hypothesis $H_0$4 was rejected because Table 11 showed that the t (503) = 1.180 was not significant at p = 0.009 > 0.05. As a result, it was determined that there was significant difference in the impact of technology integration on students' learning and wellbeing at higher levels on the basis of gender.

Table 12

Differences Based on Age

Age of Respondent	N	Mean	Std. Deviation	df	F	Sig. (2-tailed)
15-20 Y	89	2.45	1.183	157 447 Total=604	1.547	0.010
21-25 Y	264					
26-30 Y	120					
More than 30 Y	32					

The analysis of variance (ANOVA) test was used to compare significant differences in the impact of technology integration on students' learning and wellbeing at a higher level on the basis of age. Table 12 showed that the F-value (1.547) was significant at p = 0.010 < 0.05. As a result, it was determined that there was a significant difference in the impact of technology integration on students' learning and wellbeing at a higher level on the basis of age.

Table 13

Locality Based Difference

Location	N	Mean	Std. Deviation	t-value	df	Sig. (2-tailed)
Rural	239	4.22	.408	-4.741	603	.000
Urban	266	4.50	.739			

It was determined that there was a significant difference between the impact of technology integration on students' learning and wellbeing at higher levels on the basis of locality because Table 13 showed that the t (503) = -4.741 was significant at p = 0.000 < 0.05. As a result, the null hypothesis $H_0$4 was rejected.

Conclusions

Data analysis was used to conclude. From the study's findings, the following conclusions were drawn:

1. It was inferred from the analysis that technology integration and students' learning and wellbeing are significantly correlate with each other's.
2. It has been determined that technology integration has a significant effect on students' learning and wellbeing at higher levels.
3. It was inferred from the analysis that technology integration was positively correlated with all factors of students' learning and wellbeing.
4. It was inferred from the analysis that technology integration has a significant effect on all factors of potential risks for students.
5. The study suggests that there was significant difference in the impact of technology integration on students' learning and wellbeing at higher levels on the basis of gender.

6. It was determined that there was a significant difference in the impact of technology integration on students' learning and wellbeing at a higher level on the basis of age.
7. The data further suggests that there was a significant difference between the impact of technology integration on students' learning and wellbeing at higher levels on the basis of locality.

Discussion

According to the study's findings, there was a significant impact of technology integration on students' learning and wellbeing at higher levels. This relationship was found to be positive between technology integration and students' learning and wellbeing at a higher level. Therefore, the null hypotheses H01 and H02 were rejected based on statistical analysis. These findings, supported by the findings of the study conducted by Liu and Huang (2021) and other findings suggest that technology integration is positively correlated with students' academic performance.

The current study further demonstrates that technology integration has a significant effect on all potential risks for students. Therefore, the null hypothesis $H_0$3 was rejected based on statistical analysis. These findings are supported by the findings of the study conducted by (Seaman et al., 2018). The current study further demonstrates that there was significant difference in the impact of technology integration on students' learning and wellbeing at higher levels on the basis of different demographic variables (gender, age, and locality). Therefore, the null hypothesis $H_0$4 was rejected based on statistical analysis. These findings support the findings of the study conducted by Seaman et al. (2018), Van Deursen and Van Dijk (2014), and Akyol & Garrison (2011) found that there are significant differences in the impact of technology integration on students' learning and wellbeing at higher levels on the basis of gender, age and locality.

Recommendations

In light of the findings from the present investigation, the researcher has proposed the following recommendations:

1. The repetition of the study may be arranged relatively with the larger sample size to validate the findings.
2. The realm of digital learning was an ambiguous area of interest. Further investigation is necessary within the Pakistani context to attain a comprehensive understanding of the effects of technology integration on students' learning and well-being in the education sector.
3. Implementing the technology integration model across various educational settings, including schools, colleges, and universities, was advised. This type of research should underpin professional education, especially in teacher training.
4. This study was only quantitative in nature. In the future, both qualitative and quantitative methods, such as interviews, faculty meeting observations, and questionnaires, may be used.
5. The investigation's scope must consider additional emerging trends in education.

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