

## A STUDY ON THE IMPACT OF STUDENT ETHICS AND DATA PRIVACY IN THE DEPLOYMENT OF EDUCATIONAL TECHNOLOGY.

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### ABSTRACT

Conventional classrooms have changed as educational technology (EdTech) has been fast adopted into classrooms. This has enhanced engagement, tailored training, and remote access among other things. On the other hand, this change has underlined important ethical problems and difficulties with data privacy preservation. Simultaneously safeguarding student data and how ethical behaviour of students influences the effectiveness of technology-based learning. Participating in the survey and semi-structured interview procedures, three hundred children and fifty teachers from various institutions produced the final data set. This was made possible by the mixed-methods approach applied. According to the findings, students who are ethically conscious also demonstrate better degrees of academic honesty and collaboration in online classrooms; their ethical awareness and the responsible use of educational technology platforms clearly correlate. Particularly with regard to informed permission, data sharing with third parties, and students' understanding of their fundamental privacy rights, the study also draws attention to significant gaps in the regulations controlling how institutions handle data. Furthermore, shown by the study are improved learning results and trust resulting from transparent data use and strict data protection policies. Given the results of the research, schools should definitely offer comprehensive ethical education courses in line with the use of different EdTech tools together with data privacy training. This work greatly adds to the increasing conversation on ethical digital learning by offering practical insights and advocating a balanced approach to the responsible integration of technology in educational settings. Future research on the effects of longitudinal studies and include a diversity of worldwide educational environments should build on these results.

**Keywords:** Educational technology, Student ethics, Data privacy, Academic integrity, Digital learning, Data protection.

### INTRODUCTION

The widespread use of educational technology (EdTech) has brought fresh ideas about how students learn and the subjects they study, therefore driving

conventional educational institutions to modify their instructional methodologies. Thanks to technological advancements, today's classrooms could be more participatory, customised to individual student's requirements, and open to everyone. Among these innovations are learning management systems, digital assessments, tutoring systems driven by artificial intelligence, online learning environments, and more. Two of the most significant and varied concerns raised by this change to digital are security of students' private data and morality of their behaviour. These two linked elements have shockingly gotten little attention even despite their increasing importance in educational policymaking. Regarding student ethics, modern students are required to go beyond their mere performance in the classroom. They are also supposed to respect their own ideas and creations and utilise the internet sensibly. Every student has to own responsibility for protecting his or her works and ideas when working online. Concerns regarding academic dishonesty like plagiarism and cheating have surfaced as online forums where students may collaborate on assignments, freely available material, and digital technology's rising usage become more common. In the fast-changing environment of today, both training children to think critically and ethically and encouraging acceptable digital citizenship practices are of equal relevance. Schools also have two responsibilities: they should teach their pupils the value of moral conduct and create a safe environment free from restrictions where they might utilise technology sensibly. EdTech systems compile so much data, so individuals are more concerned than ever about maintaining their privacy. Two of the several elements forming this data collection are behavioural analytics and student performance indicators. Because students might not completely understand the extent of data collecting or its intended purposes, their information is sometimes vulnerable to security breaches and access by unauthorised parties. EdTech has great prospects in terms of individualised learning and improved efficiency, but the sector is faced with major issues with opaque data governance and lack of openness. Concerns regarding data ownership, surveillance, and cybersecurity surface when schools collaborate with commercial businesses and employ the cloud. Most of the debate revolves around this, hence addressing these issues comes first. The main subjects of this study are the ethics of the pupils and the safeguarding of their personal data. This study is to investigate what factors affect students' faith in and use of digital learning tools as well as how their ethical decision-making supports the appropriate deployment of educational technology. The major objective of this study is to understand what beliefs about and utilise digital learning materials students have. This study is to gather quantitative data and qualitative observations in order to better grasp the most often occurring patterns, attitudes, and behaviours in educational environments. The research will be conducted with a mixed-methods approach. It also intends to underline the need of digital literacy programs educating children on ethics and privacy online. Legislators, officials, and educators must have a strong awareness of these traits if they wish to see appropriate, moral, and safe application of educational technology solutions. Since more and more people are studying

online, the focus of the debate has to change from the specifics of online learning to more general concerns including privacy, ethics, and human dignity. This first part aims to set the framework for a more comprehensive assessment of how schools should sufficiently advance technologically without compromising the privacy and integrity of their pupils. (Bai et al., 2022).

## BACKGROUND OF THE STUDY

Educators and school administrators have been quick to adopt educational technology, or Ed Tech, as a means to streamline operations and improve students' learning results in recent years. Two of the many advantages of utilising educational technology are the improvement of productivity and the customisation of learning. However, new technology does raise important ethical and privacy problems that need to be adequately addressed. There has been an increase in the number of problems related to student conduct brought about by the increasing usage of technology in educational settings. Plagiarism, cheating, and the illegal use of material found on the internet are illustrations of these problems. In addition to casting doubt on the veracity of students' academic achievements, these problems diminish classroom atmosphere and pose a risk to students' trust in their own work (Su et al., 2024). Because educational technology platforms gather, store, and use student data so extensively, there are valid concerns regarding the privacy of student information. Understanding the intricate relationship between student ethics and data privacy was crucial for all stakeholders, including lawmakers, involved in the rollout of educational technology. An exhaustive examination of the regulations, processes, and ethical principles that now regulate the integration of technology into educational contexts was required to overcome these obstacles. Looking into the problems students have while trying to find their way around the online classroom was a crucial ethical consideration. Concerns around the improper use of technology and problems with honesty and integrity are among these obstacles. The collection, storage, and security of student data by educational technology platforms; specifically, how these platforms guarantee adherence to privacy regulations and guidelines. Examining how data privacy policies relate to student engagement, academic performance, and their implementation was the driving force for this study. Researchers provide the following advice and guidelines for the use of educational technology to lawmakers, educational institutions, and instructors in an effort to promote ethical behaviour among students and guarantee the confidentiality of their information.

With any luck, this research will shed light on some previously unknown facts and provide some solutions to the problems plaguing educational technology's data privacy and ethical standards. These traits, which also happen to be the desired results of the study, were the primary focus of the researchers. The study's overarching goal was to develop a trustworthy online classroom that could accommodate all students. (Zhao & Li, 2023).

## PURPOSE OF THE RESEARCH

This study is to investigate how decisions on data privacy policies of educational institutions affect student involvement, trust, and academic achievement as well as how ethical conduct of students effects their responsible usage of educational technology platforms. This study intends to achieve three objectives: ascertain how well students understand and apply ethical principles to digital learning technologies; learn about students' and educators' opinions on how to collect, store, and share academic and personal data; and find out how institutional policies and practices help or damage students' and educators' ability to act ethically and protect their data in digital learning settings. This will ensure that, in the classroom, technology is used safeguarding of personal values and privacy. This paper seeks to add to the present discussion on responsible digital learning by encouraging the integration of technology developments with ethical values and privacy concerns. The institution's policies and practices should be designed in keeping with this aim, which also motivates students to be responsible and honest online as they negotiate the ever-changing environment of technology across their academic career.

## LITERATURE REVIEW

In times past, educational establishments would conduct annual assessments of the percentage of students who graduated and those who continued their education. Teachers would assemble this information by using student grades and the conversation that took place in the classroom. Although the utilisation of data is not a unique idea, learning analytics is now seeing a surge in popularity as a consequence of many different topics coming together. Some of these topics include the amount of data that is being gathered, the capacity for storage, the processing power of institutions, the kinds of visualisation tools that are available, and the need for big data analysis and application. Learning analytics has become an indispensable instrument in the area of higher education as a result of the fact that "the quantification, measurement, comparison, and evaluation of the performance of institutions, staff, students, and the sector as a whole is intensifying and expanding rapidly".

A business with a Chinese headquarters, "learning analytics is the measurement, collection, analysis, and reporting of data about learners and their contexts, for understanding and enhancing learning and the environment in which it occurs." This is a very common and famous use of the phrase, and it refers to this specific reading of the sentence. With the need for learning analytics on the rise, schools must establish policies to ensure that students are following the established tactics in the classroom. Truthfulness and trust-building, data practicality, access assurance, and privacy protection are the most crucial metrics to track. The four policy topics highlighted by the Data Quality Campaign regarding the deployment of learning analytics are crucial for institutions to take into account. Some of the many

overarching steps in learning analytics include gathering data, merging data from several sources, detecting patterns, making decisions based on data, interpreting results, and updating models. To provide just one example, learning analytics is an intricate procedure that comprises several general procedures. Clow illustrates the idea of the Learning Analytics Cycle graphically within the framework of his study. After these general standards are established, companies can modify their operational strategies. (Liu & Zhang, 2022).

## **RESEARCH QUESTIONS**

How does the use of educational technology influence students' sense of academic responsibility and integrity?

## **RESEARCH METHODOLOGY**

### **RESEARCH DESIGN**

The quantitative data analysis was conducted using SPSS version 25. The odds ratio and 95% confidence interval were used to ascertain the strength and direction of the statistical link. The researchers developed a statistically significant criterion at  $p < 0.05$ . A descriptive analysis was performed to determine the key characteristics of the data. Quantitative approaches are often used to evaluate data obtained from surveys, polls, and questionnaires, as well as data modified by computational tools for statistical analysis.

### **SAMPLING**

Research participants filled out questionnaires to provide information for the research. Using the Rao-soft programme, researchers determined that there were 830 people in the research population, so researchers sent out 930 questionnaires. The researchers got 900 back, and they excluded 20 due to incompleteness, so researchers ended up with a sample size of 880.

### **DATA AND MEASUREMENT**

A questionnaire survey served as the principal tool for data gathering in the study. The survey had two sections: (A) General demographic information and (B) Responses on online and offline channel variables assessed using a 5-point Likert scale. Secondary data was obtained from many sources, mostly on internet databases.

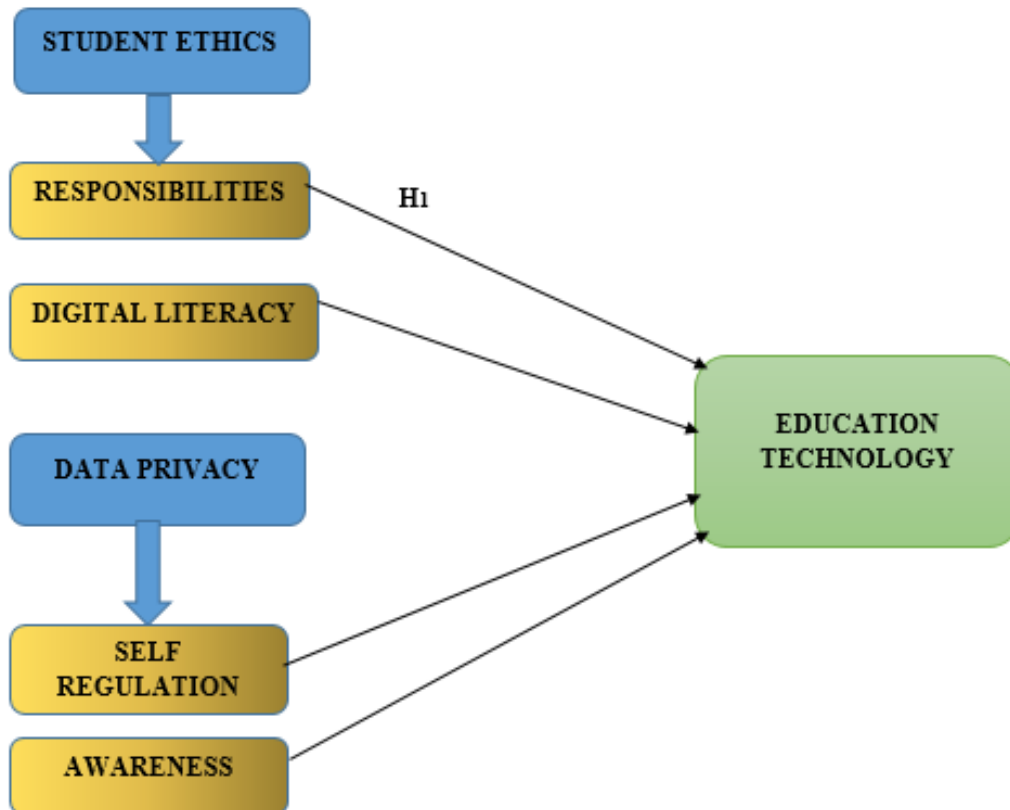
### **STATISTICAL SOFTWARE**

The statistical analysis was conducted using SPSS 25 and MS-Excel.

### **STATISTICAL TOOLS**

To grasp the fundamental character of the data, descriptive analysis was used. The researcher is required to analyse the data using ANOVA.

### CONCEPTUAL FRAMEWORK



### RESULT

**Factor Analysis:** A common use of Factor Analysis (FA) is to uncover latent variables within observable data. In the absence of definitive visual or diagnostic indicators, it is customary to use regression coefficients for evaluations. In FA, models are crucial for success. The objectives of modeling are to identify errors, intrusions, and discernible correlations. The Kaiser-Meyer-Olkin (KMO) Test is a method for evaluating datasets generated by multiple regression analyses. The model and sample variables are confirmed to be representative. The data indicates redundancy, as seen by the figures. Reduced proportions improve data comprehension. The KMO output is a numerical value ranging from zero to one. A KMO value ranging from 0.8 to 1 indicates a sufficient sample size. The below quantities are considered suitable, according per Kaiser: The subsequent approval standards established by Kaiser are as follows:

A lamentable 0.050 to 0.059, insufficient 0.60 to 0.69

Middle grades often span from 0.70 to 0.79.

Exhibiting a quality point score between 0.80 and 0.89.

They are astonished by the range of 0.90 to 1.00.

KMO and Bartlett's Test for Sampling Adequacy Kaiser-Meyer-Olkin statistic: 0.870

The outcomes of Bartlett's test of sphericity are as follows: The degrees of freedom for the chi-square test are around 190, with a significance level of 0.000.

**Table 1: KMO and Bartlett's Test.**

<b>KMO and Bartlett's Test</b>		
<b>Kaiser-Meyer-Olkin Measure of Sampling Adequacy.</b>		.870
<b>Bartlett's Test of Sphericity</b>	<b>Approx. Chi-Square</b>	3252.968
	<b>df</b>	190
	<b>Sig.</b>	.000

This illustrates that claims made for sampling reasons are valid. Researchers used Bartlett's Test of Sphericity to assess the significance of the correlation matrices. A sample is deemed good based on the Kaiser-Meyer-Olkin criteria when the result is 0.870. The p-value derived from Bartlett's sphericity test is 0.00. The correlation matrix is not an identity matrix, as shown by a statistically significant outcome from Bartlett's sphericity test.

## INDEPENDENT VARIABLE

**Students Ethics:** An ethics of an individual consists in his moral principles, values, and actions during an activity. One's behaviour is moulded by their basic moral compass, which also acts as their philosophy. Everybody lives by their own set of moral values. Said another way, the students' ethics should be consistent. This is important as complete homogeneity of moral values results from all pupils following the same set of ethics. Here in the blog, the researcher was discussing how ethics could help a student succeed professionally and how they affect their personal growth. (Huang & Yang, 2023).

## FACTOR

**Responsibilities:** In daily life of today, "responsibility" is quite a frequent term that is usually defined as responsibility for one's own acts. Only technically defined in the modern period, by law, and hence including a legal dimension that still exists, this is also its most old and broad definition. The term "responsibility" just lately acquired a more exact moral dimension in the two distinct philosophical systems of Emmanuel Lévinas and Hans Jonas. Focussing just on accountability, these thinkers expanded their conceptual range from the "did" (mostly legal) to the "ought to be



done” (mostly moral). Both points of view on responsibility enter the field of bioethics, specifically regarded either as biomedical ethics (responsibility having more of an individual nature and being more controversial) or as environmental ethics (responsibility having more of a social nature and being less controversial). Beginning within a historical and philosophical framework, this entry presents an etymological and conceptual definition of “responsibility,” then addresses some various highly contentious circumstances developing in the biomedical field and questions the limits of individual responsibility (Wang & Chen, 2023).

## DEPENDENT VARIABLE

**Education Technology:** With the advent of innovative technology, many traditional schools have resorted to modern techniques to facilitate student learning. Early steps recognize the role of technology in education. Which indicates the importance of audio-visual equipment like tele media, recording media, computer etc. Thus, educational technology emphasizes the art of employing so-called hardware, innovative media, and machine industry methods for educational purposes. It has now become clear that the systematic way in which technology is used to achieve a purpose is as important as the use of technology. Today the software aspect of educational technology has reached an important point i.e. it is useful in melding behavioural practices or in other words useful for solving problems of promoting learning and motivation. The most widely known meaning of educational technology today is more special than the acquisition of its hardware or software (Zhang & Liu, 2023).

**Relationship between Responsibilities and Education Technology:** Every student has a responsibility to ensure moral involvement in the application of educational technologies and to safeguard academic record privacy. This is justified by its very relevance. It was really crucial, so this occurred. Students more and more are expected to take personal accountability for their behaviour. A few instances of this responsibility are obeying school policies, acting morally while using knowledge, and being kind on digital platforms. As digital technology finds increasing presence in schools, this expectation is probably going to becoming stronger. Strong feeling of duty goes beyond simple rule following. It calls for being totally conscious of how the researcher activities could compromise the integrity of education and the security of common digital environments. This is thus because one component of the great sense of obligation is following the rules. Students who completely grasp their responsibilities for the use of educational technologies are more likely to use them in a way that preserves academic integrity and safeguards private data. This is driven by students using instructional technology more commonly in ways that upholds academic integrity. In the digital age of today, ethical standards are vital. Encouragement of students to take personal responsibility allows them to absorb new technology more successfully. Consequently, in the classroom it is imperative to inspire responsibility and ownership (Schmitz & Jáuregui, 2021).



Subsequent to the above debate, the researcher proposed the following hypothesis to analyse the link between Responsibilities and Education Technology.

**H<sub>01</sub>: There is no significant relationship between Responsibilities and Education Technology.**

**H<sub>1</sub>: There is a significant relationship between Responsibilities and Education Technology.**

**Table 2: H1 ANOVA Test.**

ANOVA					
Sum					
	Sum of Squares	df	Mean Square	F	Sig.
<b>Between Groups</b>	39588.620	373	5655.543	1084.684	.000
<b>Within Groups</b>	492.770	506	5.214		
<b>Total</b>	40081.390	879			

This inquiry will provide significant findings. The F value is 1084.684, achieving significance with a p-value of .000, which is below the .05 alpha level. This indicates that the hypothesis “**H<sub>1</sub>: There is a significant relationship between Responsibilities and Education Technology.**” is accepted, whereas the null hypothesis is rejected.

## DISCUSSION

Although the use of technology in the classroom has revolutionised learning, it has also brought up significant concerns regarding students’ privacy and ethics. Schools must comprehend the effects of digital tools on student behaviour and data management as new technology are inherent to their operations. The regulations governing student behaviour in the classroom, sometimes referred to as “student ethics,” stress the need of being truthful, having integrity, and being respectful to others. Students utilising digital technologies for group projects, online conversations, and other activities should bear in mind the need of acting ethically in a technologically sophisticated setting. Students encourage trust and cooperation between themselves and their classmates by modelling moral behaviour in the classroom. There was still a lot of worry about data privacy when it came to educational technologies. Data security, unauthorised access, and likely abuse have emerged as major issues due to the increasing acquisition of personal data via digital platforms. Ensuring the confidentiality of student information is of the utmost importance for several reasons. These include complying with legislation such as FERPA and maintaining the trust of parents, students, and institutions. It was only fair that all parties involved—including parents, teachers, and students—be informed of who was in charge of collecting certain data. Finding the right middle ground between student ethics and data security is of the utmost importance when it comes

to instructional technology. Students' engagement with these technologies is likely to be highly beneficial if they understand their ethical responsibilities around data sharing. Through this interaction, they are able to increase their educational prospects and cultivate a culture of accountability. Additionally, students feel more secure when school policies prioritise data protection, which in turn boosts their engagement and motivation in class. This setting may still present a number of difficulties. Since many students may be unaware of the ethical implications of their online actions, unintended invasions of privacy may occur. To add insult to injury, schools may encounter pushback when using new technologies, especially when concerns about data handling arise. Training on data privacy and ethical technology usage could benefit both instructors and students if institutions really prioritise these issues. Having clear policies and a culture of responsibility are the two most important things for keeping everyone informed. The importance of ongoing education on data privacy and ethics is growing in light of the exponential pace at which technology is evolving in the future. It is important for schools to foster conversations on these topics so that students may develop a sense of agency and control over their online personas. Schools may do their part to improve classroom technology integration by highlighting the need of ethical conduct and data protection. Ultimately, this resulted in classrooms that were safer and more engaging for all students. Adopting instructional technology should ultimately prioritise student ethics and data privacy. By carefully considering these factors, educational institutions may establish a setting that fosters creativity while also protecting the rights and well-being of students.

## CONCLUSION

Finally, there was a complex but essential connection between student ethics and data protection as it pertained to the implementation of educational technology. Given schools' increasing reliance on technology to enhance learning, instilling a strong sense of ethics in each student is of the utmost importance. In addition to fostering an environment where students are comfortable being themselves online, this paradigm also helps students learn to be respectful and truthful in the classroom. Ensuring the privacy and security of students' information was of the utmost importance. People were more inclined to adopt instructional technology when they believed their data was handled with transparency and honesty. All students and their families are included in this. Finally, students get the skills they need to thrive in today's digital economy through this type of involvement, which enhances education. Successful implementation, meanwhile, is not without its share of challenges. Since the likelihood of advancement may be hindered by a lack of understanding of ethical responsibilities and data protection, educational institutions should prioritise continuous education and open communication. One way schools may promote accountability is by guaranteeing that both students and instructors have access to the resources they need to succeed. In the future, it will be crucial to take a proactive approach to data privacy and ethics. Not only does

this prepare children for their future academic and professional endeavours, but it also ensures that they will be responsible members of the online community. Schools could then give students a secure environment free from invasion of privacy and security risks where they may learn and utilise technology without fear. Ethical principles and the necessity for data protection formed the bedrock of education's future within the context of a society increasingly reliant on digital technologies.

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