

IMPACT OF ARTIFICIAL INTELLIGENCE ON THE ATTITUDES OF SCHOOL TEACHERS TOWARDS TEACHING - LEARNING PROCESSES

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Abstract:

The use of Artificial Intelligence (AI) is steadily becoming a common practice within today's classrooms and is changing how teaching and student learning occur in schools. AI tools provide many possibilities for educators to help; from creating lesson plans and providing students with individualized support. This research study examines the attitudes of school teachers regarding the use of Artificial Intelligence tools in the teaching-learning process. A descriptive survey method was employed and data were collected through a self-designed five-point Likert questionnaire from 75 school teachers located in Navi Mumbai. Based on the responses of the participants in this study, it appears that most teachers are aware of AI tools and demonstrate an overall positive attitude regarding their usage within education. For instance, many teachers feel that AI assists in making lesson plans, provides support for assessing student needs, has the potential to decrease workload, and improves the overall quality and pace of instruction. However, a number of teachers also expressed some serious concerns related to the following: data security, ethical concerns, overreliance on technology, and potential to impede the development of critical thinking skills among students should there be too much reliance on AI. It is noted that there is a general consensus among the participant teachers that AI should enhance teaching, not replace it. As a result, the findings of this research have provided insight and have emphasised the need for adequate teacher training, the establishment of ethical guidelines, and clear ethical standards related to Artificial Intelligence.

Keywords: *Artificial Intelligence, Teacher Attitude, Teaching–Learning Process, Educational Technology, AI Tools, Digital Pedagogy, Technology Integration, Ethical Concerns, Teacher Training.*

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Introduction:

“AI is not about replacing humans; it’s about amplifying human ingenuity.” - **Satya Nadella (CEO, Microsoft)**

The significance of this quote is representative of the massive transformations that are taking place as a result of Artificial Intelligence. The traditional classroom with chalkboards and lectures will soon be obsolete, as we are moving toward a more, dynamic, digital-based, technologically rich and highly interactive manner in which educators will use intelligent tools to create lesson plans, teach, assess their students and provide support to their students. The integration of Artificial Intelligence (AI) in education is increasingly

recognized for its potential to enhance instructional delivery, streamline administrative tasks, and personalize learning experiences. As a result of Artificial Intelligence, new opportunities are arising with the introduction of adaptive learning platforms, automated feedback systems, data-driven assessments, and virtual tutoring; thus, making learning more personal, efficient and inclusive. Moreover, teachers will not lose their role as a result of these changes; they will actually gain new opportunities to increase their professional abilities, as they will spend far less time on routine tasks and can concentrate their efforts on developing creativity, mentorship and critical thinking skills in their students.

Educators' perceptions about using AI in their classrooms will ultimately determine how successful AI integration will be in the classroom as this very rapidly changing environment evolves. Teacher attitudes toward AI are shaped not only by its perceived advantages but also by ethical and professional concerns. As a result, teachers' awareness, training and acceptance of AI, along with their concerns associated with ethical issues such as data privacy, over-reliance on technology and students' decline in their analytical skills, will have a huge impact on the effective use of AI tools in their classrooms. The purpose of the paper, titled; "Impact of Artificial Intelligence on the Attitudes of School Teachers towards Teaching-Learning Processes." is to investigate the evolution of the technological transformation of education and human dimensions.

This research seeks to understand the role of artificial intelligence in determining what educators see as advantages and disadvantages and how this will affect their approach to teaching and learning. In addition, it will delve into how the current view of pedagogy can be redefined through the interplay between human intelligence and machine intelligence. Finally, findings from this research will demonstrate that both artificial intelligence and education will benefit through working together in the future, with AI as an innovative element while educators offer the compassion, ethics, and context that only people can provide.

Need of the study:

The rapid advancement of Artificial Intelligence (AI) has significantly transformed the educational landscape by introducing intelligent tools, adaptive learning platforms, automated assessment systems, and digital instructional resources into classrooms. The educational field experiences a major transformation because schools increasingly use Artificial Intelligence (AI) technology which changes their methods of teaching and assessment and classroom supervision.

While AI offers opportunities for personalized learning, efficiency, and innovation in pedagogy, it also raises concerns regarding dependency on technology, ethical considerations, and changes in teachers' professional roles. Successful AI deployment in educational settings depends on three factors which include teachers' ability to accept the system and their knowledge about it and their willingness to implement it. Many educators feel the benefits of AI but also have concerns related to data privacy and lack of training and ethical issues and over-dependence on technology. Therefore, it is indispensable to study teachers' attitudes to understand both opportunities and challenges in AI adoption.

This study is needed to identify teachers' perceptions and the support and training they require and the barriers they face while using AI tools. The findings will help policy makers and school administrators and curriculum planners develop effective professional development programs while they ensure responsible AI integration and maintain teachers' essential functions in education.

Aim of the study:

"To study the impact of Artificial Intelligence on the Attitudes of School Teachers towards Teaching - Learning Processes."

Objective of the study:

To access the impact of Artificial Intelligence on the Attitudes of School Teachers towards Teaching - Learning Processes.

Operational Definitions:

❖ **Impact:** In the present study, Impact refers to the measurable influence or effect that the use and exposure of Artificial Intelligence (AI) tools and technologies have on school teachers' attitudes, perceptions, beliefs, and readiness toward adopting AI in their teaching-learning practices. It will be assessed through responses obtained from

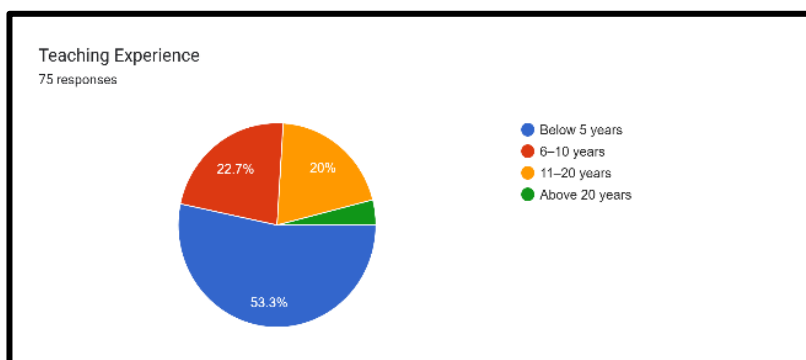
a structured questionnaire designed by the researcher.

- ❖ **Artificial Intelligence:** Artificial Intelligence in this study refers to computer-based technologies and applications that simulate human intelligence to perform educational tasks such as lesson planning, content generation, automated assessment, personalized learning support, virtual tutoring, and classroom management tools (e.g., chatbots, adaptive learning platforms, and AI-powered educational software) used by school teachers.
- ❖ **School teachers:** School Teachers refer to professionally qualified educators teaching at the primary, upper-primary, secondary, or higher-secondary levels in recognized schools. For operational purposes, it includes teachers who are currently engaged in classroom instruction and have at least one year of teaching experience.
- ❖ **Teaching learning process:** The Teaching-Learning Process in this study denotes the interactive and systematic activities carried out by teachers and students for knowledge acquisition, skill development, assessment, feedback, and

Data Analysis:

The researcher has used the Descriptive Analysis. Percentage was used to represent the data.

1. During data gathering firstly the questions were asked on the teaching experience of the teachers. Based on the data 53.3% teachers having below 5 years of experience. 22.7% of the teachers having 6 to 10 years of experience. 20% of the teachers having 11 to 20 years of experience. Only 4% of the teaching having above 20 years of experience of teaching experience.



classroom engagement. Operationally, it includes instructional planning, delivery methods, use of digital/AI tools, student evaluation techniques, and strategies that facilitate student understanding and participation within the classroom context.

Methodology of the study:

The study was aimed to find the impact of Artificial Intelligence on the Attitudes of School Teachers towards Teaching - Learning Processes. The methodology used in the present study was descriptive research. Under descriptive research survey method was used.

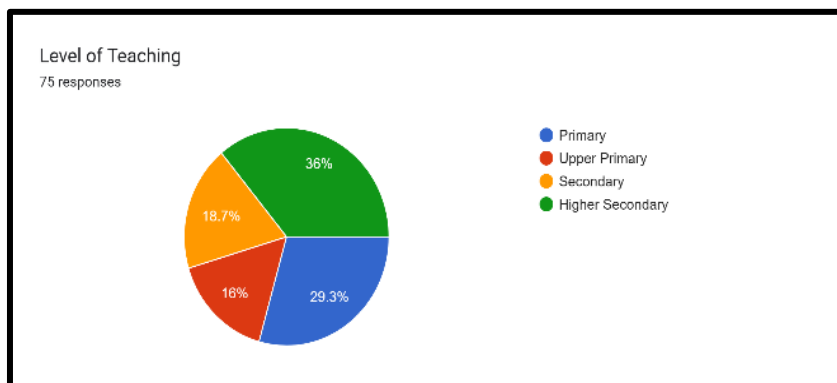
Population and Sample of the study:

The population of the study was teachers of Tilak Education Society's institutions located in Nerul, Vashi and Ghansoli region, Navi Mumbai. Sample consists of 75 teachers at various levels of teaching. Convenience sampling technique was used for present study. Convenience Sampling comes under Non-Probability Sampling.

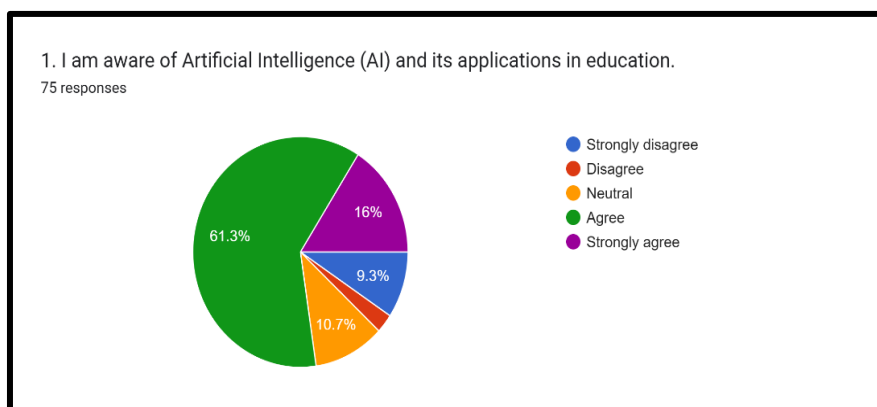
Tool of the study:

A five-point Likert Scale was developed by the researcher consisting 15 items having options strongly agree, agree, neutral, disagree and strongly disagree.

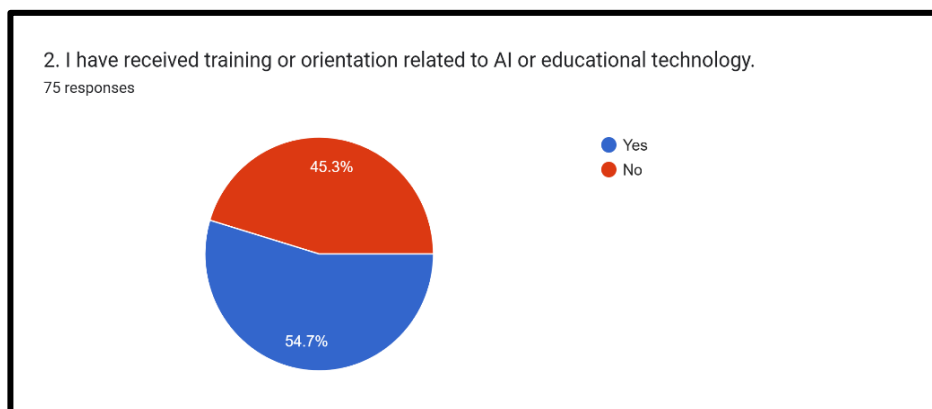
2. The questions were asked on the levels of teachings of the teachers. Based on the data 29.3% teachers have experience of teaching in primary section, 16% in upper primary section, 18.7% teachers have experience in secondary section and 36% of the teachers have experience of teaching in higher secondary section.



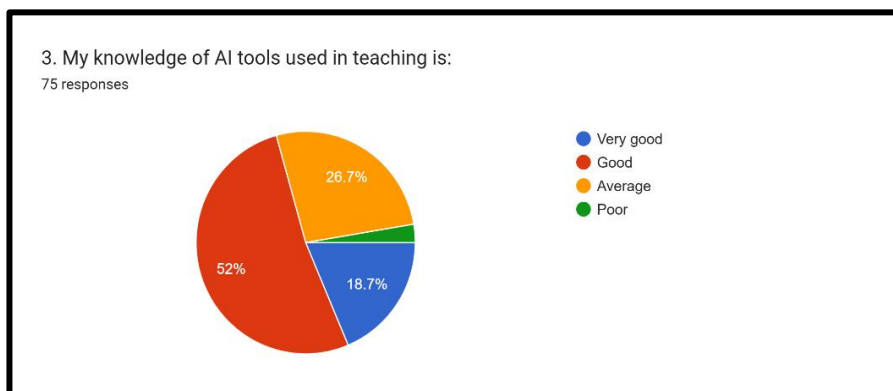
3. Around 16% and 61.3% of teachers strongly agreed and agreed that they are aware of AI applications, 10.7% remained neutral, and around 12% disagreed and strongly disagreed around awareness of artificial intelligence and its application in education. This indicates high general awareness, though a small percentage still requires orientation.



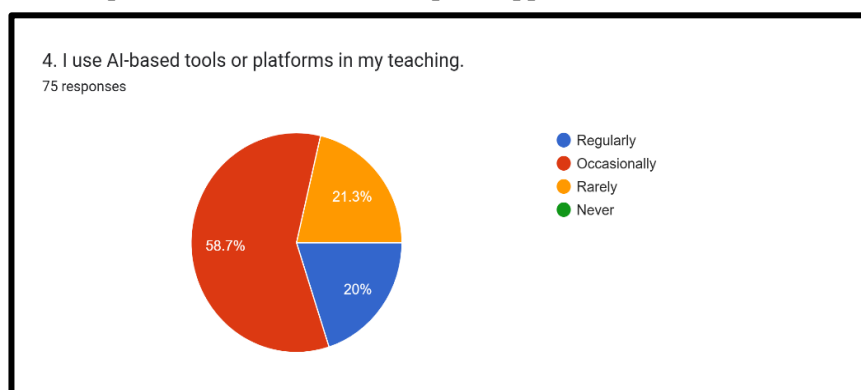
4. The pie chart shows 55% of the teachers received training on AI and 45% not received. This suggests that still 45% of the teachers have not received formal training, highlighting a significant professional development gap.



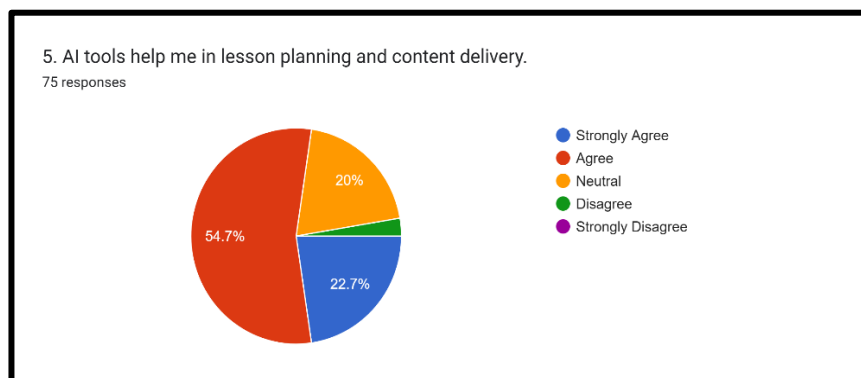
5. 18.7% and 52% of the teachers reported Very Good and good knowledge of AI, 26.7% Average, and 2.6% Poor. This indicates that while most of the teachers feel confident about use of AI tools in teaching, only a smaller group require to perceive themselves as highly skill and knowledge in AI.



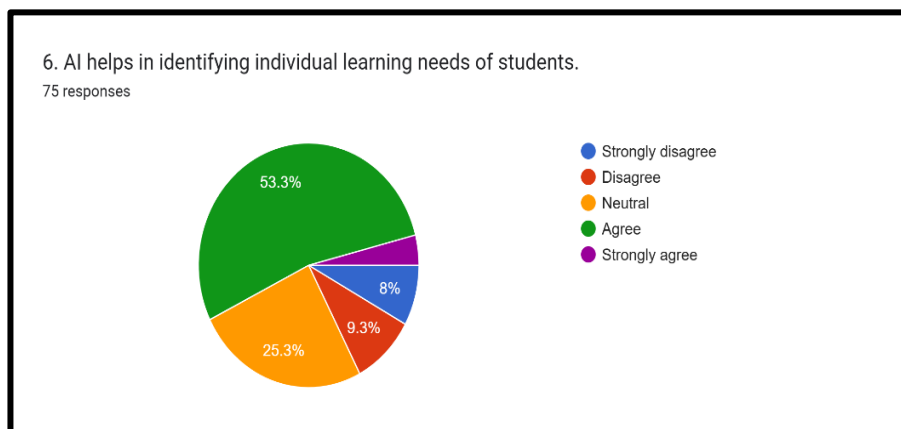
6. The pie chart shows, 20% of educators use AI on a regular basis, 58.7% use occasionally, and 21.3% rarely. This suggests that teachers' use of AI is moderate. The fact that most people use it "occasionally" implies that educators are aware of AI and employ it for particular purposes. It has not yet been completely incorporated into regular teaching procedures. Rare users might encounter obstacles related to confidence, access, or training, whereas the smaller group of frequent users exhibits greater digital confidence and adaptability. In general, AI is seen less as a necessary classroom requirement and more as a helpful supplemental tool.



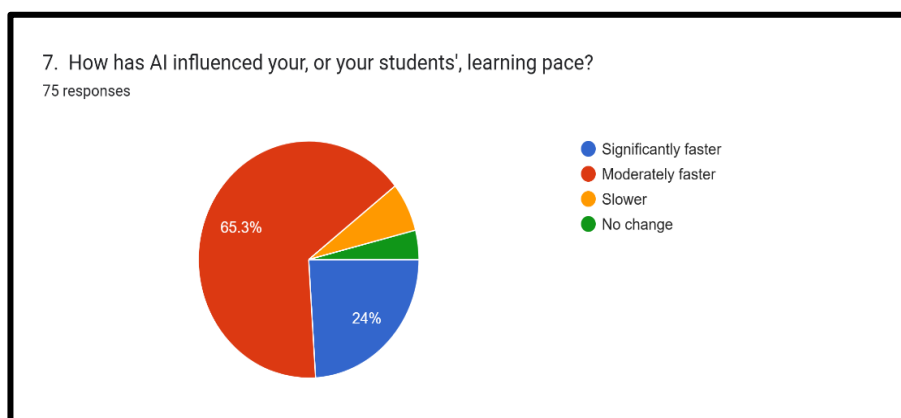
7. Nearly 22.7% strongly agreed and 54.7% agreed about AI tools help for lesson planning and other instructional material's, 20% were neutral, and very few were disagreed. This shows that a clear majority finds AI beneficial for instructional preparation.



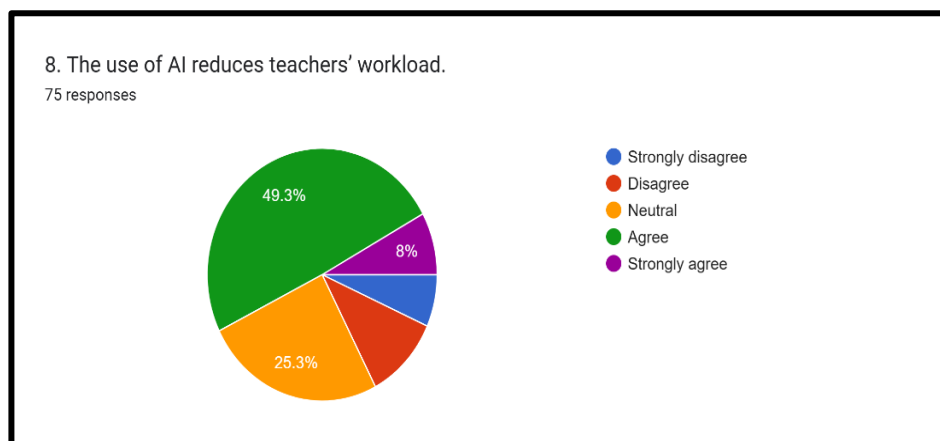
8. 53.3% given agreement on AI helps on identifying learning needs of the students, 25% neutral, round 10% disagreement. Teachers generally recognize AI's potential for personalized learning, though some remain uncertain.



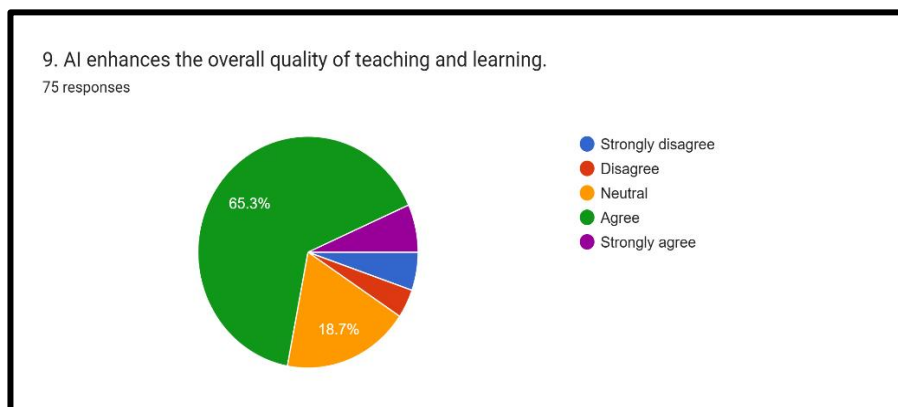
9. 65.3% reported moderately faster AI influenced learning pace, 24% significantly faster, very few reported slower and no change in influencing the learning pace by AI. This indicates that most teachers perceive AI as improving efficiency, though its impact is not universal.



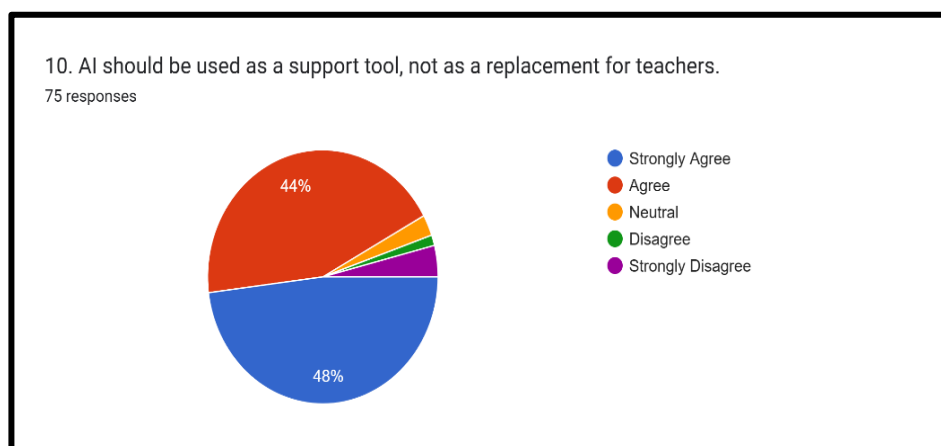
10. 8% and 49.3% strongly agreed and agreed as AI reduces teacher's workload, 25% neutral, very few disagreed on this. This suggests that AI is largely viewed as a time-saving and supportive mechanism.



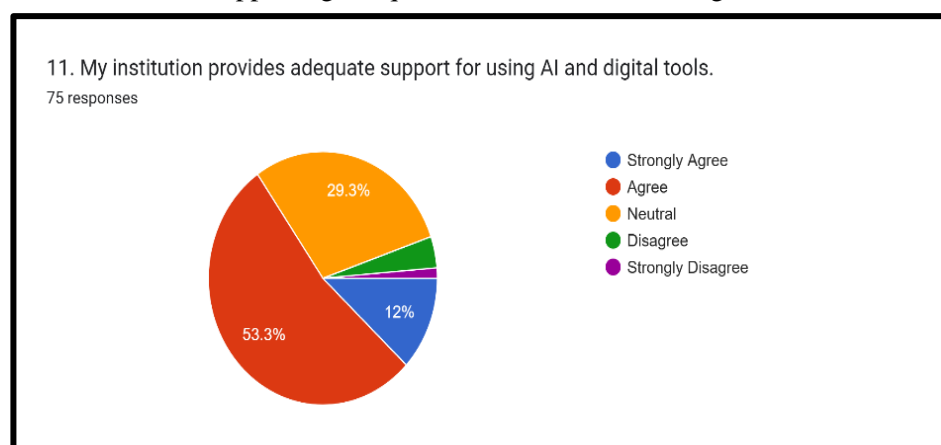
11. 65.3% agreed that AI enhances quality of teaching and learning, whereas 18.7% have reported neutral reactions. A significant majority of the population believes AI has a positive impact on teaching standards, Quality of teaching and learning.



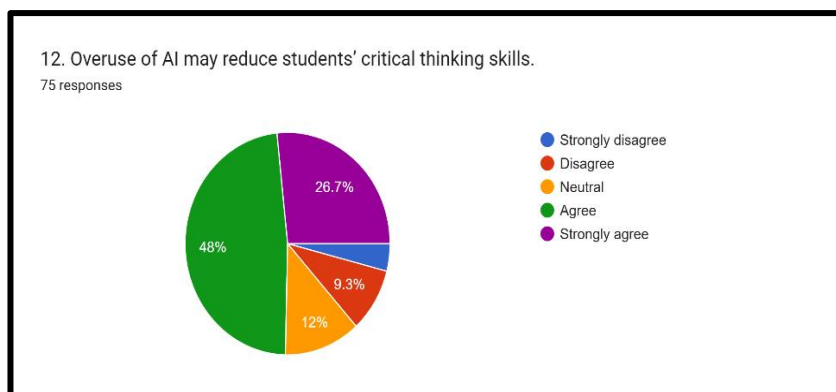
12. An overwhelming 48% strongly agreed and 44% agreed that AI shouldn't replace teacher's, it should work as a supporter. This highlights a strong human-centric belief, where teachers value AI as an aid rather than a substitute.



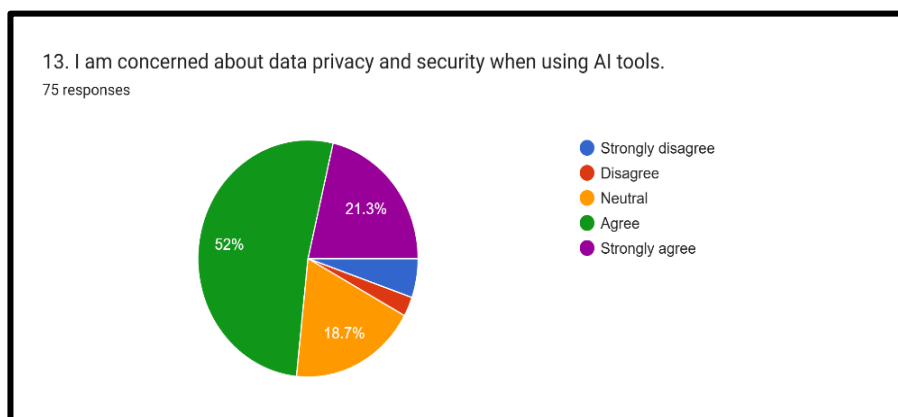
13. 53.3% agreed and 12% of the teacher's strongly agreed that respective institution provides adequate support for using AI and digital tools, while, 29.3% of the teachers reported neutral reaction. This indicates that most of the institution shows readiness on supporting adequate use of AI and other digital tools.



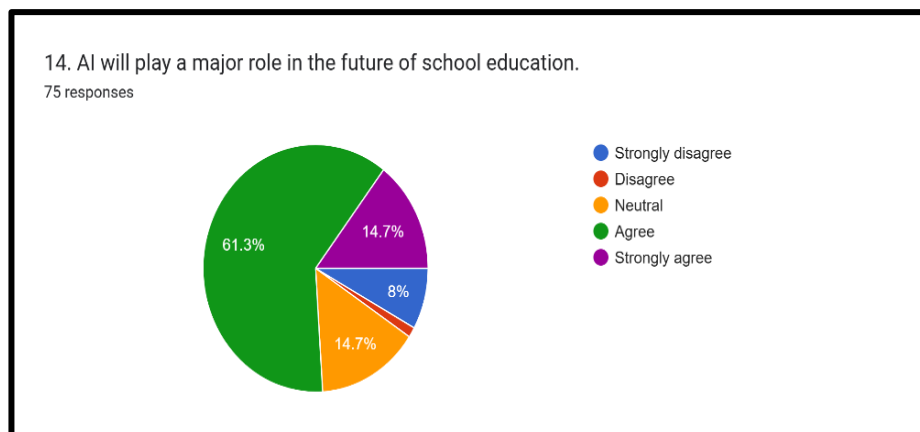
14. On the other hand, the pie chart above indicates that the majority of teachers are of the view that there is a problem with the overuse of AI, since about 48% agreed, and 26.7% strongly agreed, view that if there is an overuse of AI, it could affect the students' critical thinking skills. A smaller percentage of the respondents, 12% remained neutral, which could imply that they are either uncertain or lack the experience necessary to form an opinion on the matter. Only a small percentage disagreed with the concern.



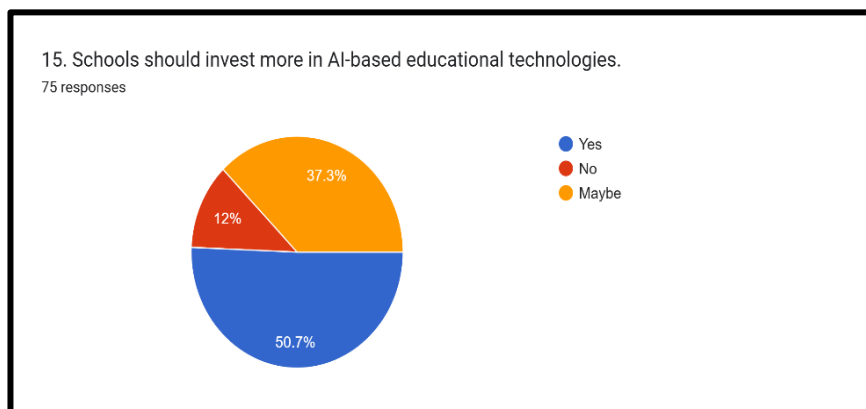
15. 72% expressed concern on data privacy and security while using AI tools, 18% neutral, 10% not concerned. This shows high ethical and security awareness among teachers.



16. 76% of the teacher's strongly agreed and agreed that AI will play a major role in the future school education, 15% neutral, and rest disagreed. Teachers demonstrate a strong optimistic outlook regarding AI's future significance.



17. 50.7% said Yes that school should invest more in AI - based educational technologies, 37.3% Maybe, 12% No. This indicates broad support for technological investment, though some teachers prefer cautious or phased implementation.



Findings:

The results of the study show that most of the respondents were young and early-career teachers, as more than half of them had below five years of teaching experience, most of them teaching at higher secondary and primary levels. Teachers generally showed high awareness of Artificial Intelligence and its applications in education, and most rated their level of knowledge on AI tools as good or very good. On the other hand, close to half of the teachers have not received formal training, which is a noticeable professional development gap despite reasonable self-confidence in using technology.

On the level of classroom practice, AI use has been positioned as moderate, and it is mostly occasional than regular, meaning that teachers at present regard AI as an additional supportive tool rather than as an everyday teaching assistant. A majority of the teachers clearly perceived that AI is beneficial in planning lessons, preparing instructional materials, identifying individual needs, improving the pace of learning, and reducing workload. Many teachers believed that AI contributes to an overall positive increase in the quality of teaching and learning, reflecting a favourable pedagogical outlook.

The study points out significant attitudinal and ethical

concerns of teachers. Most of them believe that AI will support them instead of replacing them. Thus, this study points out a significant human-centric attitude towards education. However, teachers in most schools are of the view that they receive sufficient technological support. Some of the significant concerns are related to data privacy, security, and critical thinking.

With hindsight, teachers tend to have a positive attitude towards the role that AI plays or will play in the educational sector, supporting more investment in AI. At the same time, many teachers would want to adopt AI in a balanced manner.

Suggestions:

- The study implies that educational institutions and policymakers should ensure that there is AI training for the teachers and the students, digital infrastructure, and ethical guidelines for the safe utilization of digital technology.
- Policymakers have a responsibility to create effective policies, ensure data privacy, fund digital infrastructure, and ensure that there is equality of access to AI in education.
- Also, teachers and student-teachers should strive to upgrade their digital knowledge and utilize AI

as an enabler but not encourage its utilization that suppresses critical thinking and creativity.

- Lastly, parents have a responsibility to develop an elementary understanding of AI, keep track of their children's utilization of digital technology, and ensure a healthy balance between traditional and digital sources of knowledge."

Conclusion:

Based on the research, the conclusion is that teachers, in general, adopt a positive but cautions attitude towards the employment of Artificial Intelligence in the process of teaching. On the one hand, Artificial Intelligence has recognized benefits in enhancing teaching plans/lessons, efficiencies, and quality of teaching/lessons. On the other hand, there is no doubt that Artificial Intelligence is hardly employed as a main facilitator in teaching/lessons, as teachers are strongly of the view that Artificial Intelligence has an important function as a facilitator rather than a replacement for human teachers themselves.

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