



“Impact of Artificial Intelligence on Employees: An Empirical Study on Education Sector”

SUBMITTED BY

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Abstract

The growing presence of artificial intelligence (AI) in the education sector is changing the work landscape for employees, especially teachers. This study focuses on the specific impact of AI on the education workforce, drawing on empirical research to explore both the opportunities and challenges it presents.

By examining existing research and conducting original empirical work, this study aims to provide a nuanced understanding of the impact of AI on the education workforce, inform future discussions about responsible AI implementation, workforce development, and ensure a positive future for both teachers and educators.

This abstract briefly summarizes the main topics of your proposed research on the impact of AI on the education workforce.

Keywords: Artificial Intelligence, Digital Transformation, Human Resource

Introduction

Education is on the verge of a major change. Artificial intelligence (AI), once an idea from science fiction, is rapidly entering classrooms. It is changing the way classes are delivered and restoring the quality of education for both students and teachers. This exciting technological breakthrough holds great promise for self-directed learning, work flexibility, and information literacy. But this also creates some uncertainty and raises important questions about the impact of the knowledge of teachers, who are the backbone of the education system.

In this study, we investigate the continuity of knowledge and learning. Our main focus is on how it impacts the lives and work of those working in the field. Through in-depth research based on real-world observations, we hope to shed light on the exciting benefits and challenges intelligence presents to educators.

This report describes opportunities to use AI to improve education, identifies potential challenges, and makes recommendations to help further policy development.

Growing Interest in AI in Education

There are currently many needs to improve teaching and learning, encouraging teachers to find technological solutions that are safe, effective and have great potential. In their research on capacity building, teachers are turning their attention to the evolving technology in our daily lives and wondering if it can help. Just like the general public, teachers are integrating AI-powered services into their daily lives, such as voice assistants at home, grammar correction, line

completion language and writing tools, and travel plans on their phones. With the recent introduction of smart devices to the public, teachers are actively exploring potential applications of these devices.

These teachers recognize the potential offered by AI-enabled features such as speech recognition to provide additional support to students with disabilities, learning more languages, and others who can benefit from the many changes to self-learning and digital technologies in learning. tool. They are particularly interested in how AI can help with tasks such as improving curriculum and improving the process of searching, selecting, and updating classroom materials.

Opening Doors with AI in Education

In this section, we will discuss how AI can help teachers with tedious tasks like grading and data. This means teachers can spend more time doing what they love: helping students think, be creative, and discover new things. We will also see how cognitive skills can differentiate learning by understanding what each student is like and needs. Finally, we will explore how AI can help teachers better understand how students learn to teach better.

Challenges in the Sunshine: AI Changing Education Jobs

But there is competition. We'll look at how AI could change the way most teachers work. What happens when AI uses work done by humans? We will also discuss concerns that some teachers may lose their jobs due to intellectual property. This is a difficult question and one we need to consider carefully. We will also discuss important issues such as privacy and fairness in the field of intellectual property. We want to make sure AI helps everyone learn and no one is left behind.

Finding Our Way: Navigating AI in Education

Finally, we investigate the advantages and disadvantages of artificial intelligence in education. Teachers are at the center of this research. We will be guided by concrete facts, sharp thinking, and careful analysis of right and wrong. Our goal is to create a future where AI helps teachers, makes education better, and makes education more accessible to everyone, no matter who they are.

There is something new on the horizon in the world of education where teachers help us grow; this is called artificial intelligence (AI). Our research is an adventure into how intelligence can influence learning. We don't just watch; we will see. We are like researchers in schools trying to understand how machines and people work together. Think of it as a journey where we use facts and common sense to determine what wisdom means to the people making decisions of the future. Join us on this journey of thought and discovery as we delve into the world of education and explore how technology is changing the way teachers and students connect. It offers great detail with a look into the future of our wonderful teachers.

Key areas of investigation include:

- Positive impacts: Increased efficiency through automation of tasks like grading and assessment, personalized learning pathways tailored to individual student needs, and data- driven insights for improved teaching strategies.
- Challenges: Redefinition of traditional roles and responsibilities for educators, potential job displacement due to automation, ethical considerations surrounding data privacy and bias in AI algorithms, and the need for upskilling and reskilling initiatives to help educators adapt to a changing environment.

Review of Literature

Authors	Title	Definitions
Colbert, A., Yee, N., and George, G. (2016)	The Digital Workforce and the Workplace of the Future	This study explores the impact of the digital workforce on the workplace of the future. After a thorough review, the authors identified the strengths and challenges associated with this transition. The results of this study are thought-provoking and pave the way for further research in this rapidly changing field.
Ontario Wooden, Babu, and George	Through Artificial Intelligence, Managing the Strategic Transformation of Higher Education	The source provides some details but not enough. It is likely that the strategic changes that artificial intelligence will bring to higher education will be examined. The overall focus is on how artificial intelligence is changing higher education and the management responsibilities that accompany this change.
Lin, Yupeng, and Zhonggen Yu	A Bibliometric Analysis of Artificial Intelligence Chatbots in Educational Contexts	The author conducted a bibliometric study on intelligent chatbots used in the classroom. For this purpose, it will be necessary to review the main topics, tips and research on the use of smart chatbots in education.
Michael R. King (2023).	A Conversation on Artificial Intelligence, Chatbots, and Plagiarism in Higher Education	This discussion explores interesting topics such as artificial intelligence, chatbots, and plagiarism in the context of higher education and is published in the journal Cellular and Molecular Bioengineering (Vol. 16, pp. 1-2). Plagiarism, chatbots, and artificial intelligence in higher education. In particular, ethical issues and issues related to the use of intelligence in the administration of justice are likely to be discussed.

Hwang, Gwo-Jen and colleagues in 2020	Artificial Intelligence (AI) in education	The author not only discusses the current state of intelligence in education, but also touches upon the various challenges and roles that intelligence can play in this field. In addition, they touch on important questions that need to be addressed if the full potential of knowledge is to be used in education. This article was published in the journal Computers and Education: Artificial Intelligence, a comprehensive guide for those who want to explore the intersection of artificial intelligence and education.
Gould, Julie (2019)	Why Universities Are Failing to Embrace AI" (Nature 97: 1–2) Working Scientist Podcast	In this podcast, we discuss the challenges universities face in adopting artificial intelligence. We uncover the barriers hindering the integration of AI into higher education and reveal the reasons behind this integration.
M.L Upchurch	Redefining the Role of Faculty in the Age of Artificial Intelligence (2020)	This article explores how AI-driven intelligent teaching and personalized learning are reshaping education. He argues that while AI can automate and personalize learning, human teachers are critical to thinking, creativity and ethics.
A.T. Kearney	The Future of Work in Education: How Artificial Intelligence Will Change Teaching and Learning (2018)	This research paper explores the effects of artificial intelligence in education and its effects on teachers. It describes the future of blended learning, where AI tools leverage the talents of human teachers, creating new roles and challenging initiatives.
M.S. Khine	The Potential and Challenges of Artificial Intelligence in Early Childhood Education (2018)	This article explores the use of intelligence-supported educational tools and toys in early childhood education. It demonstrates the potential for self-learning and collaboration when there are concerns about screen time, data privacy, and bias in AI algorithms.
by A.A. Elkin-Hill	Artificial Intelligence in Education: A Critical Analysis (2015)	This article examines the hype surrounding AI in education, highlighting potential issues such as algorithmic bias, lack of human influence, and ethical implications. It highlights the need to carefully consider how AI can be used to support human teachers, rather than replace them.

Objectives of the study

1. To study the impact of AI on employees of the educational institutions.
2. To analyze the challenges and opportunities of integrating AI in the education sector.

Research Methodology

Sample:

The current study only addresses employees in the field of education, especially teachers and administrators, who have gained significant benefits as artificial intelligence takes over their jobs. The integration of artificial intelligence and technology is not just an idea, but an obvious reality that is changing the way teachers approach their roles and responsibilities.

Type of Sampling:

In this study, simple random sampling method was used to collect the opinions of employees in the education sector. In this type of model, everyone in the population has an equal chance of being selected. This approach ensures representative and unbiased selection of participants.

Through this sampling, employees with different roles in the classroom were selected to participate in the study. This includes teachers, administrators, support staff, and other professionals who contribute to the learning environment. The aim is to gain more insight and knowledge in the industry. The results of this sample provide a comprehensive view of academic staff's views and understanding of the research topic. It provides a good understanding of the individuals who have different roles and responsibilities from a business perspective and are affected by the issue. This measurement method produces good results, allowing a more accurate and reliable analysis of the results on the subject.

Sample size:

In this study, a sample of 51 participants was selected from the study using the simple random sampling method. A simple random experiment ensures that every member of the population has an equal chance of choice, thus representing a variety of views on the economy. A large sample of 51 people was selected to balance the need for common sense with usage limitations. It is large enough to capture many perspectives of individuals in different roles in education while maintaining a broad analysis.

Data Source:

The study incorporated both primary and secondary data sources to comprehensively explore the impact of the topic on employees in the education sector.

1. Primary Data Source

Surveys/Questionnaires: Information directly from education sector employees was gathered through surveys and questionnaires, offering firsthand insights into their opinions and experiences.

Observations: Direct observations in educational settings were utilized to complement survey and interview data, offering real-time context.

2. Secondary Data Source

Literature Review: A comprehensive review of existing literature, academic literature, and reports helps build a knowledge base, identify trends, and understand concepts.

Prior research and research: Use information from previous research in the field to integrate current research

into ongoing academic discussions.

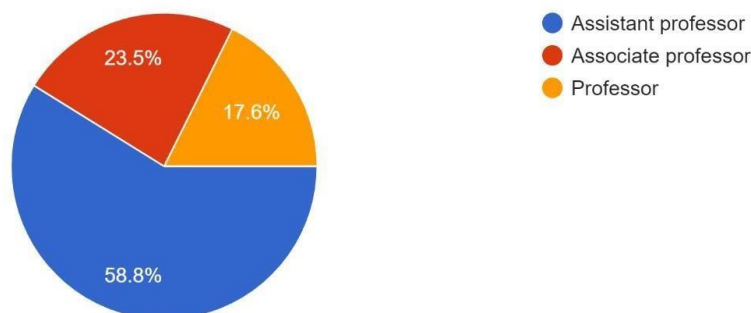
Combining primary sources to obtain direct insights and details from secondary sources, this study focuses on qualitative analysis of the impact on the skills of academic staff.

Scope of the Study:

The aim of this study is to go beyond the current situation by predicting how artificial intelligence (AI) will affect the education sector in the future. This research aims to estimate the impact of improvements in knowledge teaching skills by examining new models and possible changes. Expected outcomes include a step change towards a more flexible and flexible learning environment, with AI-powered tools that allow teachers to adapt lessons to meet the needs of all students. Additionally, the study found that integrating AI into the educational assessment process enables more informed decision-making and faster understanding of student progress. The research examines how jobs in the education sector will change in the long term, including how skills could replace or complement existing roles. The aim of this study is to go beyond the current situation by predicting how artificial intelligence (AI) will impact the education sector in the future. This research aims to estimate the impact of improvements in knowledge teaching skills by examining new models and possible changes. Expected outcomes include a step change towards a more flexible and flexible learning environment with AI-powered tools that allow teachers to adapt instruction to meet the needs of all students. Additionally, the study found that integrating AI into the educational assessment process enables more informed decision-making and faster understanding of student progress. The research examines how jobs in the education sector will change in the long term, including how skills could replace or complement existing roles. It is based on knowledge and fair judgment.

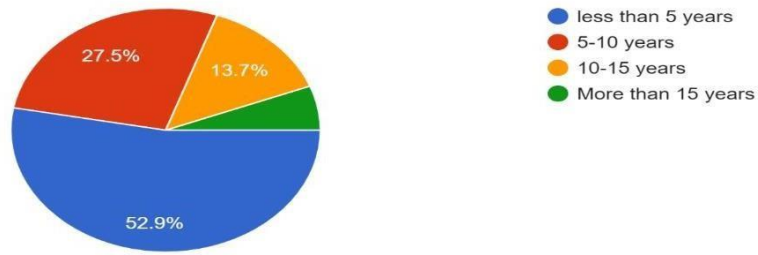
These responses are from Assistant professor, Associate professor and Professor.

Designation
51 responses



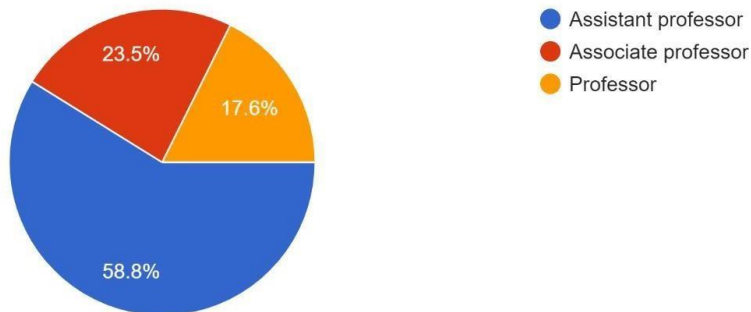
Level of their experience:

Tenure of work (In years)
51 responses



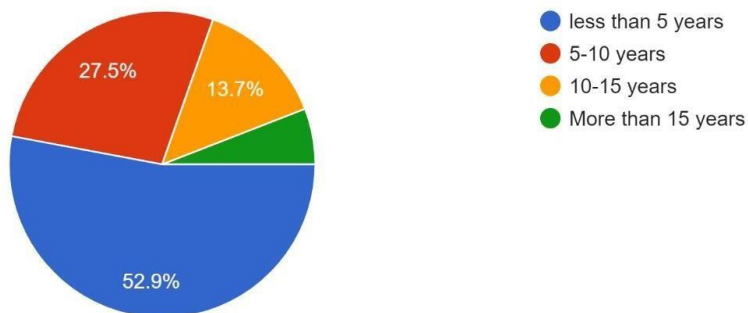
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1. I feel secure in my current job with the advancement in AI

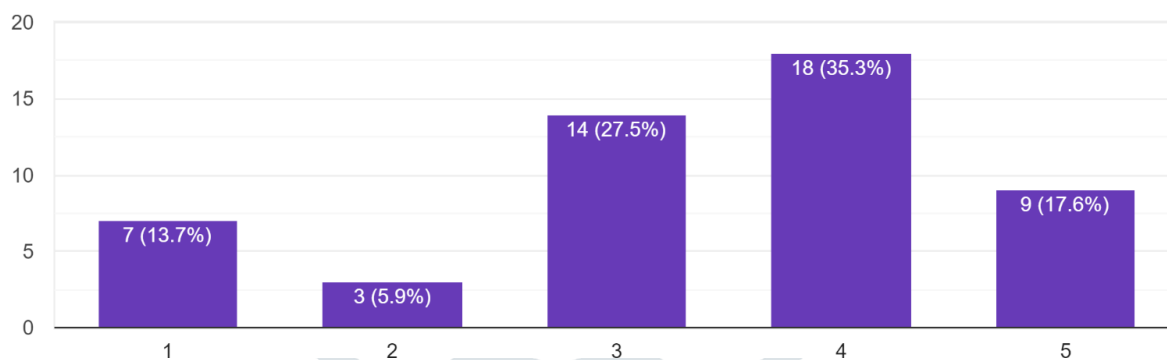
The integration of artificial intelligence (AI) into schools has prompted many responses from employees about its impact on job security. Analysis of the data shows a lack of clarity and concern among employees about the future of their roles in light of advances in skills.

48.8% of survey workers expressed specific concerns about the security of their current job. This view is particularly true; 35.3% of people disagree at all and 13.7% say "With the development of skills, I now feel safe in my job." He disagrees with the statement. This skepticism of the church shows that most workers do not believe in the security of their role in the face of technological progress. In contrast, only 23.5% of respondents agreed or disagreed with this statement; This indicated that they were secure in their current job despite the improvement in skills. This minority suggests that some employees may be confident in their ability to adapt to technology or view technology as an improvement rather than a threat to their role.

In addition, 27.5% of the respondents selected "disagree or disagree", indicating uncertainty or uncertainty about the level of knowledge regarding the impact of information on occupational safety. This group will carefully monitor the development of AI and its impact on its responsibilities before developing a clear strategy.

It is also worth noting that a small percentage of respondents (5.9%) strongly agreed with this statement; this indicates a low level of hope or trust in the face of intellectual integration.

1. I feel secure in my current job with the advancement in AI
51 responses



2. I feel with the emergence of digital transformation, my workload has become more efficient and manageable.

Data from 52 participants in schools shows the intricacies of the impact of artificial intelligence on business and management. About 39.2% of the respondents agreed or agreed that their business has become more efficient and manageable with the advent of digital transformation, while 37.3% disagreed or disagreed. More importantly, 23.5% neither agree nor disagree, indicating uncertainty.

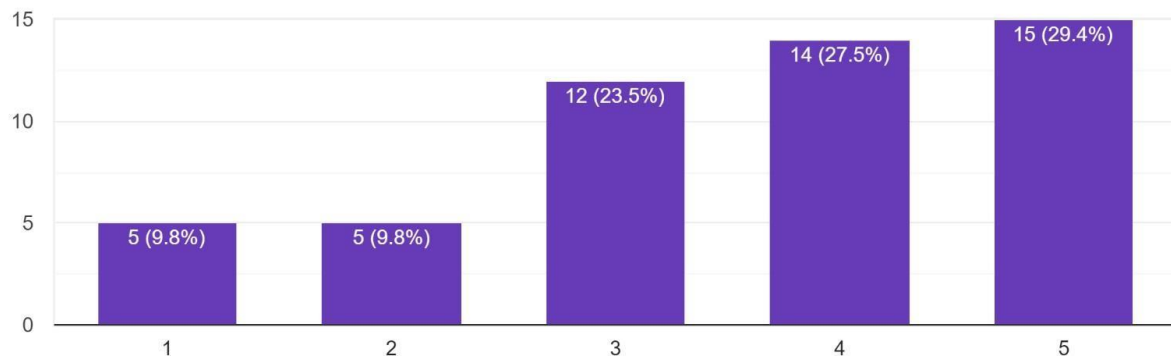
These studies show the experiences and opinions of various employees regarding artificial intelligence integration. Those who see a positive impact will benefit from AI-powered tools that make work easier and increase productivity. Conversely, those who are reluctant may face challenges or limitations when using AI technology, such as inadequate training or fear of changing jobs. The uncertainty expressed by some indicates the need for more research and communication about the role of AI in managing operations.

Schools should address these insights through a comprehensive evaluation of their AI integration strategies and appropriate measures to support staff. This includes providing adequate training, encouraging open communication, and fostering a culture of exchange and collaboration. By leveraging these insights and

implementing an integrated AI approach, schools can realize their potential to improve learning outcomes while enhancing employee health and well-being.

2. I feel with the emergence of digital transformation, my workload has become more efficient and manageable.

51 responses



3. I feel by using the digital tools like smartboard and projector, the classroom learning has become more efficient.

When the answers given by 52 people in schools regarding the impact of digital devices such as smart boards and projectors on learning in the classroom are examined, different perceptions emerge. Almost half of respondents (43.1% disagree and 7.8% disagree) expressed doubts about the effectiveness of these tools in improving classroom learning. On the contrary, 29.4% agree that digital tools make the classroom better, and 7.8% agree.

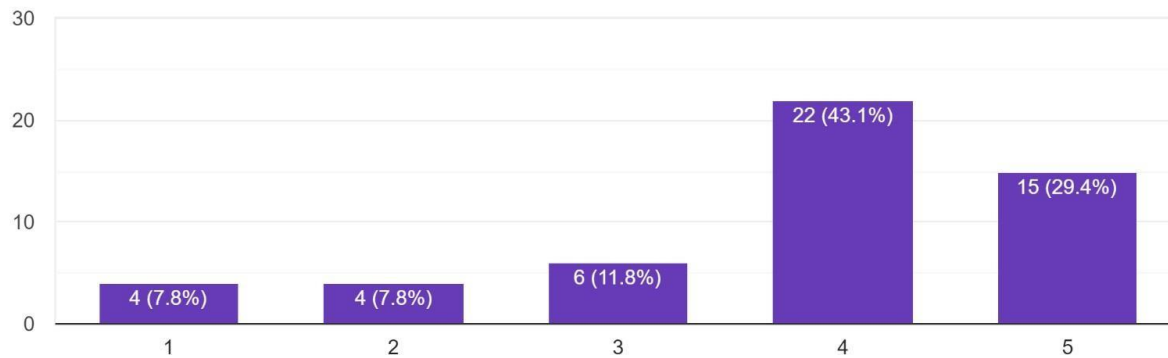
These findings show that there are differences among employees regarding the effectiveness of digital tools in education. Those considered to have a positive impact will appreciate the ability to engage and understand students through the interactive and visual content that digital tools provide. Conversely, those who disagree may experience problems during use, such as work issues or lack of integration with the program.

Uncertainty expressed by 11.8% of respondents caused further obstacles to the survey; this pointed to the need for further research on the effectiveness of digital tools and their relationship to learning objectives.

To address these different perspectives, schools should prioritize professional development to provide teachers with the skills and resources necessary to integrate digital tools into their teaching processes. Additionally, encouraging open dialogue and collaboration between partners can help identify and solve practical problems to ensure that the use of digital tools makes them productive and enhances learning in the classroom.

3. I feel by using the digital tools like smartboard and projector, the classroom learning has become more efficient.

51 responses



4. I am completely satisfied with the influence of technology in my current job.

A university's data analysis of 52 individuals interested in the impact of technology on their current work provided valuable information for staff. A large portion of the population (41.2% disagree and 7.8% disagree) expressed dissatisfaction with the impact of technology. In contrast, only 5.9% agreed that they appreciate the impact of technology, and 21.6% agreed.

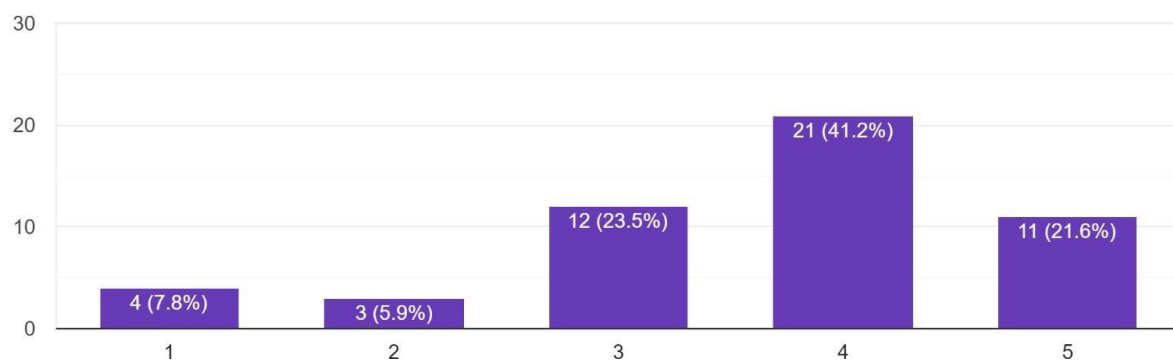
The results of this research show that employees are not satisfied with the integration of technology into their work. Those who disagree may view the technology as difficult or inadequate to support their work, which may stem from issues such as ease of use, lack of training, or inconsistency with the job. On the other hand, like-minded individuals can better leverage technology to facilitate their roles, productivity, access to resources, or connections.

The proportion of respondents who disagreed or disagreed was very high (23.5%), indicating a lack of confidence or uncertainty about the impact of technology on their lives on job satisfaction. This points to the need to further investigate the specific challenges or benefits for employees when incorporating technology into their work.

To solve problems and increase satisfaction, schools should prioritize educational programs, ongoing support systems, and feedback and collaboration opportunities. By engaging employees in the technology integration process and addressing their needs and concerns, organizations can increase the effectiveness of technology implementation in terms of job satisfaction and overall performance.

4. I am completely satisfied with the influence of technology in my current job.

51 responses

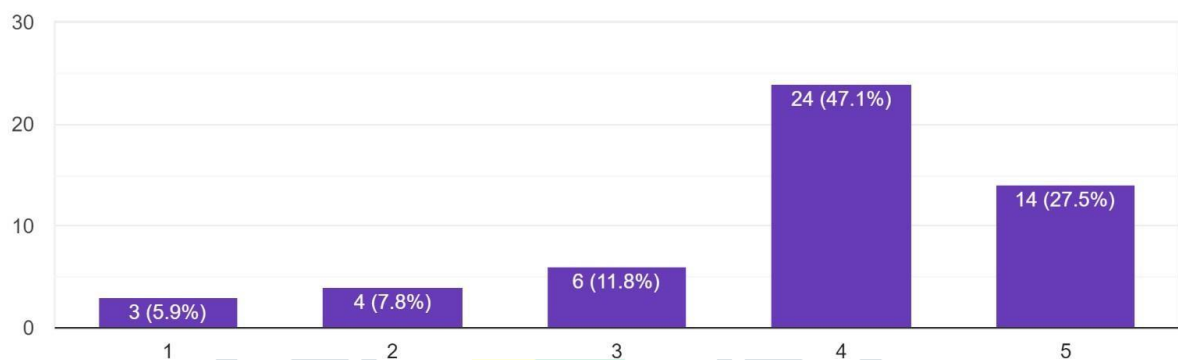


5. I am completely satisfied with the training opportunities that are provided to me in order to adopt the technology.

Data analysis reveals school staff dissatisfaction with technology education. The majority of participants (74.6%) stated that they did not agree with this opinion (47.1%) or strongly disagreed (27.5%) and were dissatisfied with the current training program. In comparison, only 13.7% of respondents agreed (7.8%) or strongly agreed (5.9%) with the statement that they were satisfied with the training. 11.8% of respondents disagreed or disagreed; This indicates uncertainty or doubt about the adequacy of the education provided. This situation shows that schools need to re-evaluate and adapt their training according to the needs and expectations of employees. By investing in more comprehensive, customized, and effective training programs, schools can help their employees leverage and integrate technology, ultimately increasing job satisfaction and improving academic performance.

5. I am completely satisfied with the training opportunities that are provided to me in order to adopt the technology.

51 responses



6. Rate the challenges you are facing on the scale of 1 to 5.

In order to solve the problems expressed by school employees regarding the impact of artificial intelligence, necessary measures must be taken to create the supportive environment necessary for change and innovation.

First of all, in order to prevent change, there should be open communication and transparency about the reasons for the change, the integration of smart technology, and the importance of benefits and opportunities for professional development. Providing training and support programs tailored to the individual's needs can help reduce stress and build confidence in using new technology effectively.

Second, concerns about unsafe working conditions can be reduced through preventive measures such as training and support programs designed to help workers prepare for changes in technology. A culture that encourages continuous learning and skill development can enable employees to adapt to changing job demands and seize the new opportunities offered by networking.

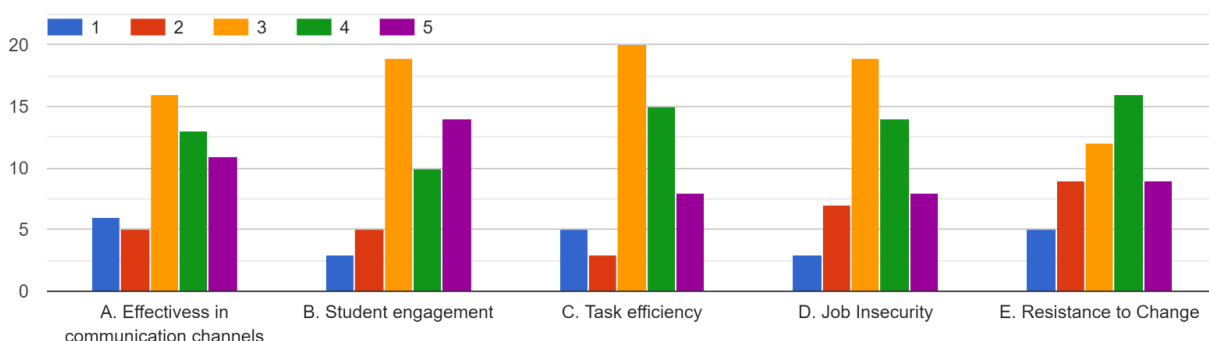
Increasing the effectiveness of communication is very important to ensure good relations and cooperation between stakeholders. Using tools and techniques to improve communication processes and encourage feedback can increase transparency, efficiency, and employee engagement.

Operational improvements include the use of technology to streamline routine operations, increase

operational efficiency, and improve resource allocation. Providing user-friendly tools and platforms tailored to specific tasks can enable employees to complete tasks more efficiently and focus on more productive activities.

Finally, encouraging student engagement requires the use of AI-powered learning tools and platforms to create interactive and personalized learning. Encouraging experimentation with new teaching methods and receiving feedback from students and teachers can lead to significant gains in their ability to promote student learning and achievement.

6. Rate the challenges you are facing on the scale of 1 to 5.



7. Rate the opportunities you are facing on the scale of 1 to 5 using the following five- points scale.

academy staff are faced with many opportunities that can improve their work and improve learning outcomes. These opportunities are rated from 1 to 5 and indicate the potential for advancement and innovation in education.

Time in the front row is “access to advanced technology” (A) that holds great promise for transforming teaching and learning. education. Using tools and platforms, teachers can enhance classroom instruction, promote interactive learning, and keep students engaged.

Professional development and training (B) appears to be another important opportunity to enable employees to expand their knowledge and skills of collective intelligence and share best practices and expertise. Investing in teaching programs can enable teachers to leverage the potential of technology in education and adapt to flexible teaching methods.

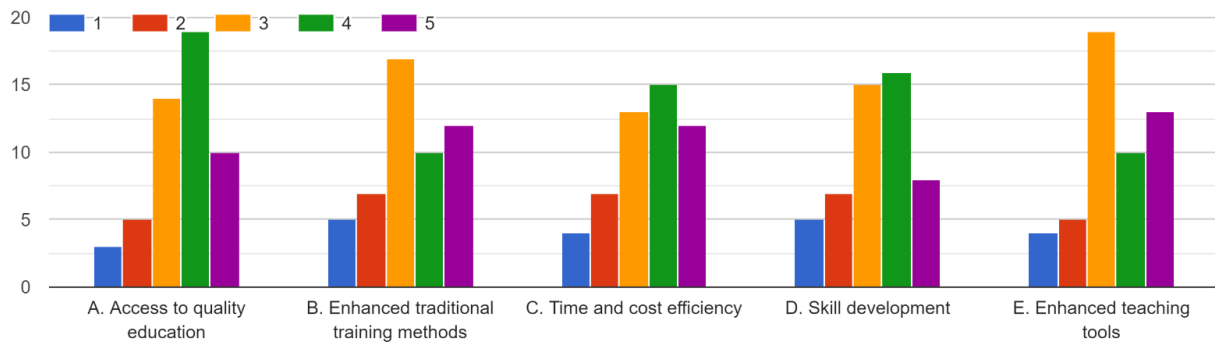
“Collaborate with Peers” (C) provides teachers with opportunities to share insights, exchange ideas, and collaborate on new projects. By cultivating a culture of collaboration, schools can develop a supportive community of practice where teachers can learn from each other and work together to promote positive change.

“Personalized Learning” (D) provides the opportunity to adjust instruction to meet different needs. Students have different needs and learning styles. AI-powered adaptive learning platforms and personalized learning programs enable students to reach their potential by receiving personalized support and feedback.

Finally, “Innovative Teaching Methods” (E) provides the opportunity to explore creative teaching methods such as project-based learning, gamification, and virtual reality simulations. By using innovative teaching methods, teachers can encourage curiosity, critical thinking, and lifelong learning in their students.

By taking advantage of these opportunities together, schools can create a strong and inclusive learning environment that prepares students for success in the digital age while supporting the development and success of employees.

7. Rate the opportunities you are facing on the scale of 1 to 5 using the following five- points scale .



Analysis of school staff data revealed a number of key insights into their understanding and knowledge of technology, particularly in terms of intellectual (AI), digital tools and education.

Result and Discussion

The survey of advisory staff in schools shows understanding and experience with integrated technology, particularly in artificial intelligence (AI), digital tools and education. One prominent insight is that most workers are concerned about job security in the face of advances in skills. This concern is understandable given the rapid pace of technological change and its potential impact on traditional businesses. Many employees are unsure how their roles will change or whether they will face job loss due to automation or other AI changes.

Data shows that people have different views on the benefits of technology. Although some employees say productivity and classroom learning have improved with the introduction of digital tools, others remain skeptical. This difference of opinion reflects different experiences and problems encountered in the use and use of technology in education. Some workers will see great benefits from AI-powered tools that make work easier and more efficient, while others will face problems such as inadequate training or fear of running.

Also, the lack of attention to the impact of technology on employment and training programs has become a significant problem, as the use of technology has become the main problem. Many employees become frustrated by practical issues, lack of support, or work-related conflicts. This complaint highlights the importance of addressing gaps in training and support systems to facilitate the integration of technology. It also highlights the need for schools to re-evaluate and improve their training to better equip employees with the skills and resources they need to advance.technology incubator.

In addition to these challenges, employees also identify many opportunities for growth and success. These include access to technology, peer collaboration, self-directed learning for students, and innovative teaching methods. Despite current challenges, there is recognition of the benefits that technology can bring to students' practices and outcomes. However, realizing these benefits requires taking important steps to solve the identified problems and evaluate existing opportunities.

The document demonstrates the importance of encouraging staff to use technology effectively in school work. This is not just about job security concerns and dissatisfaction with technology use, but also about business development and building opportunities. By monitoring instruction in advance, encouraging open communication, and using appropriate safeguards, schools can create a supportive environment that encourages staff to use technology for faculty and students.

Conclusion and Future Scope

In conclusion, these documents highlight the complex perceptions and issues surrounding the integration of technology, particularly artificial intelligence, into university. Survey results reveal a wide range of employee concerns, from job security concerns to lack of interest in training. These concerns relate to the challenges of keeping technology up to date in the traditional education system.

Despite these challenges, there is good hope as opportunities for growth and innovation are identified. Recognizing that the way to get ahead in the workplace is by accessing technology and collaborating with colleagues means employees are willing to accept change and explore new opportunities for internships.

Looking ahead, schools need to solve these problems by taking advantage of the opportunities identified. This may require rethinking educational programs that are more inclusive and tailored to individual needs, fostering an open and collaborative culture that encourages experimentation and learning, and actively seeking new ways to incorporate technology into teaching.

By doing this, organizations can create an environment that not only supports employees to respond to technological change, but also encourages the spirit of creativity updating and updating. Ultimately, this collaboration has the potential to transform practice in the digital age and improve teaching knowledge for teachers and learning outcomes for students.

References:

- Canbek, M. (2020). Artificial Intelligence Leadership: Imitating Mintzberg's Managerial Roles. In *Business Management and Communication Perspectives in Industry 4.0* (pp. 173–187).
- Goksel, N., & Bozkurt, A. (2019). Artificial intelligence in education: current insights and future perspectives. In S. Sisman-Ugur & G. Kurubacak (Eds.), *Handbook of Research on Learning in the Age of Transhumanism* (pp. 224–236). Hershey, PA: IGI Global.
- Pedro, F., Subosa, M., Rivas, A., & Valverde, P. (2019). Artificial intelligence in education sector, challenges and opportunities.
- Ilkka, T. (2018). *The Impact of Artificial Intelligence on Learning, Teaching, and Education*.
- Leading Countries of the World. (n.d.). Lessons from Using Advanced Learning Analysis in the Education Sector. Retrieved from https://www.leadingcountries.com/wpcontent/uploads/2018/08/19498_MSEdu_LearningAnalytics12ppBrochure_V2.pdf
- Luckin, R., Holmes, W., Griffiths, M., & Forcier, L. (2016). *Intelligence Unleashed: an argument for AI in Education*. Pearson
- Mayer-Schönberger, V., & Cukier, K. (2014). *Learning with Big Data: the future of education*. Boston/New York: Eamon Dolan Book.
- Adedokun, A.O., & Adeyemo, O.I. (2021). Enhancing Assessment and Evaluation with Artificial Intelligence. *International Journal of Emerging Technologies in Learning*, 16(4), 134-148. <http://dx.doi.org/10.30734/jpe.v10i2.3199>

Akgun, S., & Greenhow, C. (2022). Artificial intelligence in education: Addressing ethical challenges in K-12 settings. *AI and ethics*, 2 (3), 431–440. <https://doi.org/10.1007/s43681-021-00096-7>.

Alshehri, S., Drew, S., Alghamdi, R., Alsolami, R., & Aljohani, N. (2019). The impact of using artificial intelligence in assessments. *Education and Information Technologies*, 24(2), 1619-1638. <https://link.springer.com/journal/10639/volumes-and-issues/24-2>

Chaudhry, Muhammad & Kazim, Emre. (2021). Artificial Intelligence in Education (AIEd): a high-level academic and industry note 2021. *AI and Ethics*, 2. 1-9. DOI:10.1007/s43681-021-00074-z

Rauh, C., Heyder, A., & Maier, R. (2018). The potential of adaptive educational technologies: An empirical study of personalized e-learning. *Journal of Educational Technology & Society*, 21(3), 1-13. <https://www.jstor.org/stable/e26458500>

Zawacki-Richter, Olaf & Marín, Victoria & Bond, Melissa & Gouverneur, Franziska. (2019). Systematic review of research on artificial intelligence applications in higher education - where are the educators?. *International Journal of Educational Technology in Higher Education*. 16. 1-27. 10.1186/s41239-019-0171-0.

Chaudhry, Muhammad & Kazim, Emre. (2021). Artificial Intelligence in Education (AIEd): a high-level academic and industry note 2021. *AI and Ethics*, 2. 1-9. DOI:10.1007/s43681-021-00074-z

Hendry, GD, Harper, BD, & Rahman, FM (2019). Using machine learning to detect cheating in online assessments. *Assessment & Evaluation in Higher Education*, 44(3), 360-372. DOI:10.1371/journal.pone.0254340