

Examining the Implication of Artificial Intelligence Learning Applications on Improvement Learning Permanency of Learners at Higher Educational Institutions

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Abstract: *AI applications and new technological equipment have brought new trends in learning development. Now a days the new trends are helping learners in developing content learning skills with effective strategies that are being utilized in the education sector. Moreover, the learning styles of learners have also been changed with concern to technological development in science of pedagogy. Education and technology are connecting for rapid growth of learning process that are assisted by the new trends in technology with effective feedback and with motivational strategies that help the learners in developing the skills of understandings. There are several studies that worked on the relationship of AI with education and development of education with AI and new technologies. This study is about the relationship of education with AI applications that are helping the learners for betterment towards their learning needs. This study focuses on the learning styles of learners with AI applications and with development of learning abilities of learners. This study analyzed the main points of research which explain the relationship between education and technology. This study analyzed the factors of AI applications from the learners of higher educational institutions which are the confidence development while interacting with AI applications, increase learning interest while learning with AI applications, learning needs are fulfilled while learning from AI applications and learning development approach has been developed while learning with AI applications. Moreover, this study found that mostly all the learners have shown positive response to AI applications. This study concludes that learner's motivation and effectiveness will be increase with training sessions that will be conduct at higher educational institutes This study suggests that there should be curriculum of AI applications from school to college for providing basic knowledge about AI applications and machine learning.*

Keywords: *Education, Technology and Education, Applications of Artificial Intelligence, Learning strategies with Applications of Artificial Intelligence*

1. Introduction

These peers will be able to enable themselves to be a part of learning in the twenty-first century in the economy of intelligence that will be gained by learners. The adoption of apps that make use of artificial

intelligence has established a new environment that is conducive to efficient learning. In addition to this, it changed acts by fostering improvements in technological advancements.

Moreover, programs that use artificial intelligence can do programmed calculations, which may help learners maintain their genuine critical and logical abilities, hence facilitating greater progress in the areas of content learning. It is possible that applications of artificial intelligence will push the learning capabilities of novices to a new kind of learning generation (Ozer, M.2020). For the rapid advancement of technology, artificial intelligence is an essential component in the invention of new technologies. Technology, on the other hand, has resulted in the transformation of the conventional educational system into new and creative learning methods. Daily, technical advancements have been made, and new technological advancements. applications have been included in the process of technological innovation. New technology learning management systems and AI applications have been implemented for the purpose of educating pupils. An additional benefit of artificial intelligence is that it has assisted in the advancement of knowledge in a variety of sectors. When it comes to artificial intelligence apps, the purpose of this research is to determine how successful these applications are and how much students are motivated by them. The purpose of this study is to assess the effectiveness and motivation of university students.

2. Literature Review

There are a lot of studies that worked on the relationship between learners and applications of artificial intelligence with respect to education and teaching. The studies have focused on the ability to learn from AI applications and the motivation of learners towards the application of artificial intelligence. There are numerous applications of artificial intelligence that help learners in effective ways and manage the learning systems in the process of learning and development. Now days the implementation and functionality of these applications have been increased and it is also the new trend in learning with different approaches by the learners through new pedagogical thinking that learners will get new knowledge that will be the essential for learning and social life. These applications have the potential to build new skills of learning with developmental process (Kelly, T, R, et al 2016). The applications with effective providing knowledge to learners with monitoring the strength, low learning capabilities and providing feedback on these capabilities, these are the main solutions that are provided by the AI applications from which learning development will be started in learners to analyze themselves.

The systems that are helping to educate learners with educators in the path of learning and development that will also foster the teacher's role in developing the content ideas where all the process have been done through the personalized learning which enable them to learn with observations and doing right ways for learning process this will be also way of supervising the learning process and provide different steps in learning. These systems have potential to monitor, assist, manage student learning with feedback and facilitate the learning process with providing the right ways of learning (Sian Bayne & Jen Rose 2016).

AI applications have been used in different consequences with different techniques in different fields of learning and development. This study focused on learning with applications through the process of online way which also foster the learning process. This process of learning helps in the development of content preparation, setting, and updating the learning process with effective ways of technology solutions. This system of learning provides better ways for learning and foster the classroom settings and professional development of educators (V, Kavitha & R, Lohani, 2019). There are a lot of studies that have found that most of the learners have abilities that can provide better ways of learning with these approaches and applications.

The study focused on the application of artificial intelligence with learning ways at different stages of learning. The study focused on the competencies in specific fields for development of different communications skills and intelligence skills. These skills will help in leaning development in different ways. The leaning, management systems have been developed that are also working on the rules of machine learning process and assuming by better way for learning. This will help for producing the learning process with interaction to these systems and these systems will help in developing the ideas in learning process (N. Nenkov et al 2016). There is study that investigated the role of artificial intelligence application in learning process by identifying the learning needs of learner in the development of content learning systems with the e learning systems. The major role of eLearning is that it provides personalized learning by learning system and learners correlate with each other and foster the learning advantages. This eLearning system also worked on the way that is the collaborative systems with effective learning strategies. The major findings of this is that it measured the main ideas regarding learning with systems, performance of system and experiences of systems with learners due to new way of learning styles the experience is major role to develop the systems and interaction of learners with system is also the main point of this discoveries. This study also found that if the system works better, it will catch the learning abilities and learning experiences of the learners (S, K, Kim, et, al 2018).

The learning systems and approaches of learning systems are both important points where the learners must learn, and systems must provide the main ideas for learning. The study measured the learning and development of learners with advanced ways of learning and maintained the learners' inquiries for learning development. This learning and development played a significant role in developing content learning ideas with effective ways of learning. This system will help the learner to foster the learning and development of content understanding skills which will develop the learning experience of learners (W, Villegas-Ch et al. 2019).

3. Artificial Intelligence and Education.

The relationship between artificial intelligence and education is related to the way of learning from school to higher education. Most of the researchers have worked at school level and others have worked at a higher educational level. This will identify the role, function, and developmental stages of AI within the education sector. There are lots of studies that have found the relationship with technology and education and interaction of learners with learning applications within frameworks of learning and pedagogical perspectives. The role of AI in the education sector has enhanced the learning strategies with rapid adaptation of technology in the science of learning and development.

The studies that found the relationship between AI and education in which it is explained that AI systems are getting advancement for fostering the learning needs and development of educational system. This study further found that the association is based on the knowledge representations, natural language understanding ways, reason inquiries, discoveries of new ways of learning and smart learning advantages which provide better ways of understanding skills in learners. This study also found that AI applications have better relationships in developing the learning skills in students with effective way of providing the knowledge that is better for education sector and for educators that the learners are getting new ways of learning within the proper feedback process systems (S, EI, Janati et al, 2018). AI and education have focused relationship on developing the main roots of education where learners can be given better ways of learning development strategies for developing the confidence needed to develop the methods of learning. The relationship of learners with systems is the way that will link the knowledge with technology and with procedure that are used to deliver the content knowledge, The study that did research on the memory retention with technology and applications of machine learning systems. This study also focused on the development of memory

retention with applications and old version ways that are used to attentive on the main ideas that link the learners need with the technological equipment's. This study focused on the learning ways with applications and ways of learning with longstanding systems that were used in the past time and new ways that have capabilities to retain the memory and learning content understanding (Abbasi, S and Kazi, H, 2014). There are other lot of studies that also explain the association between the applications and learning ways that are interconnected to each other within learning context. Smart technologies that worked with AI application with the effective ways that can provide better learning ways for development of educator sector. This study focused on the ways of learning development of AI applications with learners in the content learning ways. This study found that smart technologies that are worked with AI can bring new changes in learning development. This study also found that smart technology ways brought effective change in relationships (R, Bajaj et al 2018).

4. Research Methodology

For this study investigation, the method of quantitative research is used as a research approach. For obtaining primary data from college students about the applications of artificial intelligence systems, the questionnaire tool is used as part of the quantitative research strategy. Subordinate data will be gathered from a wide range of sources, such as research journals, reports, books, and newspapers, according to the strategy.

This study will emphasize the major results that will assist the education sector in developing main doors for learners in sectors of education. The primary objective of this research is to present ideas on the uses of artificial intelligence in the education sector. The creation of knowledge for the learners will occur because of the development of many conceptions and philosophies about the uses of artificial intelligence (Kabir, S.M.S. 2016).

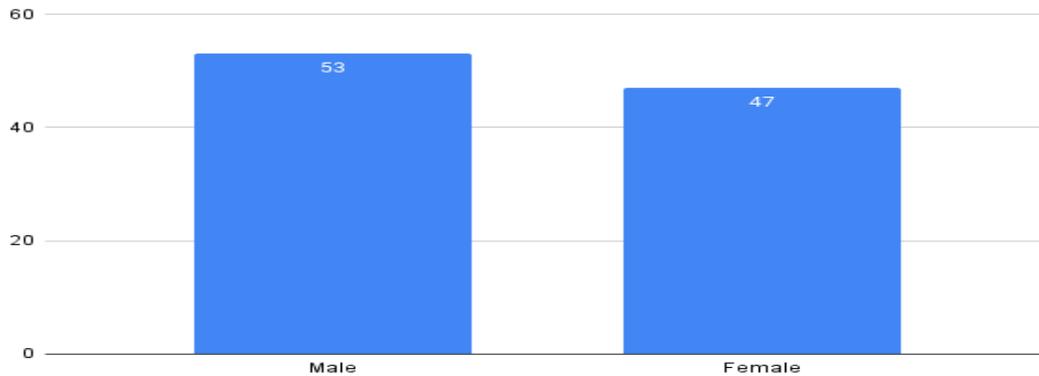
Most of the learners have acquired replies via the process of gathering data from college students. After doing an analysis on the data that was obtained, the findings are providing an explanation of the nature of the respondents' responses, which demonstrates the level of motivation and effectiveness that university students have about the applications of artificial intelligence. Data about the use of artificial intelligence has been gathered from students attending institutions in higher educational institutions, and it has been analyzed using a variety of different elements.

It is estimated that around 42 questions were included in the questionnaire, which was then gathered, analyzed, and answered with a variety of replies. (Al, Qudah, 2021) The factors that have been analyzed include the fact that artificial intelligence applications have improved your learning capabilities that AI applications have increased productivity in learning, that AI applications are helpful in increasing the amount of knowledge, and that AI applications have the potential to understand the content in ways that are both very clear and very easy to understand.

5. Respondents Expression by gender

This demographic property concerns the correspondent form from which data has been collected. This property is divided into the two portions one is male and other is female.

Figure 1 Result about the gender demographic property.

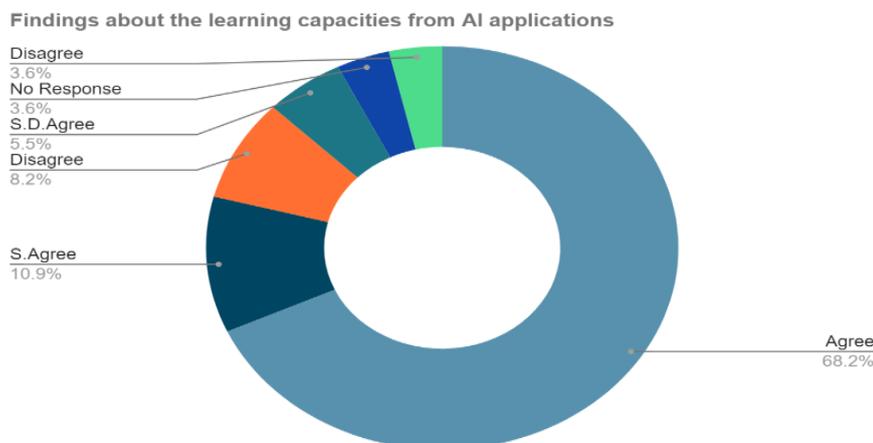


In the above figure demographic possessions that explain gender properties from data that is collected from these five higher educational universities. According to this data collection process which explain the gender property that is explaining the ratio of correspondents that how much male and how much females are there in ratio. This data set is describing that correspondent ratio is higher in female students from different universities and ratios that is form male students is lower than the females. The ratio according to the above graph that is 53% is ratio of males, correspondents in data collection from five universities and ratio of females’ students from five universities of is 47% that is lower value of correspondents from the universities.

6. Findings

6.1 Results about the learners towards the learning capacities from AI applications.

Figure 2 Findings about the learning capacities from AI applications



According to the findings of the question, 68.2% of respondents are indicating that they agree with the statement, 10.9% are indicating that they strongly agree, and just approximately 3.6% are indicating

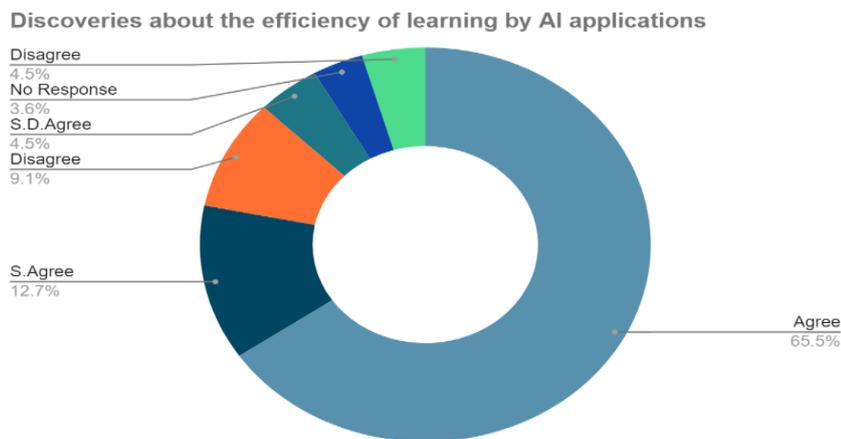
that they disagree with the statement while.

strongly disagree has value that is 5.5% and no response category have value 3.6% In above figure 1, there are five choices to fill in from the correspondents: agree, disagree, strongly agree, strongly disagree, and no answer. However, the respondents have stated that they have only reported three possibilities: agree, disagree, and strongly disagree. It is for this reason that the chart only contains their available choices. In addition, previous studies have shown the connection between artificial intelligence and the advancement of education in the learning process via the utilization of efficient technological methods and the introduction of novel approaches to machine learning.

The role of artificial intelligence (AI) in teaching and learning. The findings of this research revealed that AI has altered the classroom environment in which students may acquire knowledge, and that technological systems have enhanced learning systems. Learners discovered methods to study at home with advanced learning systems that assist students in learning more effectively with new inventive ways of culture that have changed the erudition styles of learners. During that time, tutors were used to enhance the learning capabilities of pupils, who may also bolster fundamental concepts in many subject areas. There is a connection between this issue and the uses of artificial intelligence in which learners are helped with certain learning methods. Knowledge acquirers will have a sense of assistance in the classroom because of this learning elegance, and they will increase their learning capacities via the use of AI applications (S, J Russel, et al, 2016).

6.2 Discoveries about the efficiency of learning by AI applications.

Figure 2 Explains the results about efficiency of learning by AI applications.



The question asked by the respondents, which is about the effectiveness of the learning process, indicates that the inquiry is about the output of learning using artificial intelligence applications from students at universities. Learners have provided positive replies to this question, which indicates that the level of productivity in the learning process is satisfactory. As can be seen from the graph shown above, most students are content with the artificial intelligence apps that facilitate productive learning. This is the outcome of the question that was asked before, but according to the graph that was shown earlier, eighty percent of the counterparts agree with this AI application question, and seventeen percent of them are in complete agreement with this question that is about learners having a productive learning attitude. As a result of the question that was presented before, three percent of respondents are against the deployment of artificial intelligence in the field of education. In addition, the total replies on the Likert scale are as follows: five agreements, five disagreements, five strong

agreement, five strong disagreements, and no response. Only three answers are chosen for this topic, taking into consideration the responses of correspondents who agree, disagree, and strongly agree. Findings of this study also lead to the conclusion that there are some variables that are mental efforts that are necessary for AI applications. If the functioning of AI applications were to become easier and more relaxed, then the motivation for AI applications would rise in relation to this component. Based on the findings of this research, it was determined that there would be appropriate information for in the curriculum. This content will assist students in comprehending the significance of AI applications. It was also proposed by the findings of this research that there would be training sessions providing information about the uses of artificial intelligence. In addition, the findings of this research showed that the government would regulate rules concerning the deployment of artificial intelligence in the education sector (J, S, U *et al* 2022).

7. Discussion

The results that are concerned with this study formulate the new ways regarding the teaching and learning in the higher educational institutions. The results show the importance of AI applications in the learning needs of learners.

7.1 Motivation towards AI applications for cognitive development of human beings.

This item is related to the motivation of learners towards the AI applications that will help the learners to develop their skills and learning development with advanced presenting knowledge ways. This item is also showing the importance of AI application that help the learners with new ways of learning styles that will enhance the learning and cognitive development through advanced learning strategies. This item also highlights the new trends in learning and development of critical thinking and development of new ways thinking and adoptive techniques that help the learners for the develop new learning trends with effective critical thinking skills (Jhonson, *et al* 2021).

7.2. AI applications are helpful for social humans in retentions of their memory in learning with AI applications.

When the learning process is done with providing knowledge with effective ways that are by educators enhance the knowledge with effective renovating ways of information. The applications that are used to provide knowledge with effective ways are also used to maintain transferring knowledge with useful ways. The applications are used in learning development and memory retention that help the learners for develop the memory retentions ways for intellectual development. Moreover, the findings of this study uncovered that AI applications can also help the learners in developing confidence development and learning development for context of knowledge. Whereas, learning development with AI applications helps the learners to develop understanding skills with content learning skills, technology development skills and develop critical and content learning skills with new advanced ways of learning (Abbasi, and, Qazi 2014).

7.3. Encompassing Technology integration in learning development process.

Moreover, the technology systems have helped the education sector and facilitates the learning processes that help the educational institutions and learners in developing the new areas of learning and development within these technologies for betterment of learning and development with effective technical equipment. Likewise, there are lot of technology integration systems that help the education sector and learners to boost the learning ideas with these technologies and applications of technologies. Lot of applications that have been used in learning that enhance learning way with

different subjects and with different applications that provide the feedback system that enhance covering the minor mistakes of learners and the personalized learning phenomenon provide the better ways for learning development (Chui, M, 2017).

8. Conclusions and Suggestions

The process of teaching and learning is an art that involves delivering the information in a sequential manner and developing a relationship with the learner that is conducive to the acquisition of knowledge. This method of instruction and education is comprised of a variety of phases that need to be completed to complete the operation. In addition, the educator will follow these procedures to improve the material that is being provided, which includes preparing, explaining, and understanding the questions that students have as well as providing feedback. All these processes are quite beneficial to the learning process, particularly when it comes to the process of knowledge reflection.

In a similar vein, rather than memorizing the material, the most effective methods for explaining and comprehending the topic are self-reflection and understanding the content. Learning capabilities and comprehension skills are being enhanced by the systems that are ruled by machine learning systems, which are a result of the implementation of artificial intelligence devices. Applications provided by artificial intelligence have the potential to deliver improved methods of knowing (Nilson, 2009). The majority of the many research projects are carried out with the purpose of fostering the learning systems. However, many other studies have focused their attention on the recommendations for learners to have some guidance for AI applications for effective usage in learning techniques (Williams, *et al* ,2019).

However, other studies have also decided that there should be proper usage of AI applications for the development of learning process with smart content developments with tutoring systems and with AI made systems that will enhance the learning capacities. Much of the research works have provided the important findings that AI applications can bring about innovative changes in learning systems. In a similar vein, the findings of this study concluded, with the assistance of the results of this, that learners who have interacted with AI learning systems and learners who are from higher educational institutions have positive motivation towards the applications.

Furthermore, their motivation will increase if higher education has proper sessions regarding the applications of AI. In addition, the findings of this research led the researchers to the conclusion that students who have a high level of intrinsic drive to learn have shown a high level of positive motivation and effectiveness when it comes to AI learning applications. Furthermore, this study concludes that most learners will show better motivation if the training sessions are conducted at higher educational institutions.

References

- Abbasi, S., & Kazi, H. (2014). Measuring effectiveness of learning chatbot systems on student's learning outcome and memory retention. *Asian Journal of Applied Science and Engineering*, 3, 251-260.
- Aksay, B., & Ünal, A. Y. (2016). Yapısal Eşitlik Modellemesi Kapsamında Formatif Ve Reflektif Ölçüm. *Çağ Üniversitesi Sosyal Bilimler Dergisi*, 13(2), 1-21.
- Al Mohammadi, Khalid, Harga's, Hani, Daniyal Alghazzaw, & Aldeburgh, Ghadah. (2017). A survey of artificial intelligence techniques employed for adaptive educational systems within e-learning platforms. *Journal of Artificial Intelligence and Soft Computing Research*, 7, 47-64. <https://doi.org/10.1515/jaiscr-2017-0004>

- Aliyyah, R. R., Rachmadtullah, R., Samsudin, A., Syaodih, E., Nurtanto, M., & Tambunan, A. R. S. (2020). The perceptions of primary schoolteachers of online learning during the COVID-19 pandemic period: A case study in Indonesia. *Journal of Ethnic and Cultural Studies*, 7(2), 90-109.
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77-101.
- Chatterjee, R. (2020). Fundamental concepts of artificial intelligence and its applications.
- Chua, C. P., & Valencia, L. D. (2020). The role of artificial intelligence in education amidst the COVID-19 pandemic.
- Clark, L. A., & Watson, D. (2019). Constructing validity: New developments in creating objective measuring instruments. *Psychological Assessment*, 31(12), 1412. <https://doi.org/10.1037/pas0000626>.
- Comi, S. L., Argentin, G., Gui, M., Origo, F., & Pagani, L. (2017). Is it the way they use it? Teachers, ICT and student achievement. *Economics of Education Review*, 56(1), 24–39. <https://doi.org/10.1016/j.econedurev.2016.11.007>
- Dick, S. (2019). Artificial intelligence.
- Drost, E. A. (2011). Validity and reliability in social science research. *Education Research and Perspectives*, 38(1), 105.
- Andriessen, J., & Sandberg, J. (1999). Where is education heading and how about AI. *International Journal of Artificial Intelligence in Education*, 10(2), 130–150.
- Janati, S. E., Maach, A., & El Ghanami, D. (2018). SMART Education Framework for Adaptation Content Presentation. *Procedia Computer Science*, 127, 436-443.
- Kabir, S.M.S. (2016). Basic Guidelines for Research: An Introductory Approach for All Disciplines. *Book Zone Publication, Chittagong-4203, Bangladesh*.
- Keleş, P., & Aydın, S. (2021). University Students' Perceptions About Artificial Intelligence.
- Mahmoud, M. A. W., Haggag, M. Y., & Abd Elghany, A. E. B. (2017). Stochastic analysis of a duplicated standby system subject to shocks during repair. *Journal of the Egyptian Mathematical Society*, 25(2), 186-190.
- McCombs, S., & George, T. (2023, November 20). What Is Research Methodology? | Steps & Tips. *Scriber*. Retrieved December 5, 2023, from <https://www.scribbr.com/dissertation/methodology/>
- Nenkov, N., Dimitrov, G., Dyachenko, Y., & Koeva, K. (2016). Artificial intelligence technologies for personnel learning management systems. In *2016 IEEE 8th International Conference on Intelligent Systems (IS)*, 189-195.
- Nilsson, N. J. (2009). *The Quest for Artificial Intelligence: A History of Ideas and Achievement*. Cambridge University Press. <https://doi.org/10.1017/CBO9780511819346>
- Özer, M. (2020). The contribution of the strengthened capacity of vocational education and training system in Turkey to the fight against COVID-19. *Journal of Higher Education*.
- Pandey, P., & Pandey, M. M. (2015). *Research Methodology: Tools and Techniques (Vol. 1)*. Romania: Bridge Center.
- Pujari, V., Sharma, Y., Burate, M., Jagdishprasad, Shri, R. Bajaj, & V. Sharma. (2018). Smart Education with artificial intelligence based determination of learning styles. *Procedia Computer Science*, 132, 834-842.
- Reis, J., Santo, P. E., & Melão, N. (2019). Artificial intelligence in government services: A systematic literature review. In *World conference on information systems and technologies*, 241–252.

- Russell, S. J., & Norvig, P. (2016). *Artificial Intelligence: A Modern Approach*. Malaysia: Pearson Education Limited.
- Su, J., & Zhong, Y. (2022). Artificial Intelligence (AI) in early childhood education: Curriculum design and future directions. *Computer Education and Artificial Intelligence*, 3, 100072.
- Sandkuhl, K. (2019). Putting AI into context: Method support for the introduction of artificial intelligence into organizations. In *2019 IEEE 21st Conference on Business Informatics (CBI)*, 157–164.
- Schiff, D. (2022). Education for AI, not AI for education: The role of education and ethics in national AI policy strategies. *International Journal of Artificial Intelligence in Education*, 32(3), 527–563.
- Tavani, J. L. (2018). *Ethics and Technology: Controversies, Questions, and Strategies for Ethical Computing (5th ed.)*. John Wiley & Sons.
- Tyrewala, J. (2021). Application in Artificial Intelligence.
- Villegas-Ch, W., Palacios-Pacheco, X., & LujánMora, S. (2019). Artificial intelligence as a support technique for university learning. In *2019 IEEE World Conference on Engineering Education (EDUNINE)*, 1-6.
- Williams, D. (2016). A conceptual framework for integrated STEM education. *International Journal of STEM Education*. <https://doi.org/10>