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Artificial Intelligence Applications and Higher Educational Institutions: New Development for Learning Advancement

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Abstract: *Artificial Intelligence is the science of learning and teaching with significant systems that enable the learners to have the best knowledge according to the learning needs and perspective of learning styles. From the past years Artificial Intelligence has been rapidly advanced in the technology and as well as in knowledge technology where these Artificial Intelligence applications have unconventional ways advanced the learning strategies. These AI applications have also contributed to the education sector where these applications have led to the essential role in learning in the higher educational systems. This study analyzed the motivation and effectiveness of learners towards the artificial intelligence learning approach about the learning applications. About one hundred twenty-one respondents were touched from five higher education institutions and data is collected from higher educational institutions. This study found that most of the learners were satisfied with AI applications towards the factors that are artificial intelligence applications increase your learning capabilities, AI learning applications increase productivity in learning, what do you think AI applications are useful in enhancing the knowledge, what do you think AI applications have potency towards the easy and clear content learning process. Most of learners responded in positive motivation about the above questions and countered about optimistic effectiveness towards the applications of artificial intelligence. Finally, this concludes that more interaction of learners with AI learning application will provide good results in learning the content of concerned subject. This study suggests that there will be training for learners regarding AI learning applications.*

Keywords: *Artificial intelligence applications, Education; Teaching and learning, Motivation and Effectiveness of learners*

1. Introduction

The use of AI is growing in education day by day with improved technology. In achieving the goals that are concerned with learning attainment in education development with possible ways that are used for enhancing the learning capabilities. AI bringing the personal learning activities for learners that facilitates learning and provide opportunity for learners to learn better with learning technologies. This not only helps in learning but also provides the education response and improvement in feedback educational assessment. Thus, AI provides the online education stages and allows mutual understanding content with pursuits that are customized according to the need of base learning

contents of learners. Learners that learn online by the help of learning management systems that use AI for response and personalized suggestions, automated feedback and monitoring the students learning progress. Furthermore, AI is promoting studying styles by creating learning discussion groups and cooperative simulated backings systems that can answer the learners' questions for development of content learning process. This process also provides extra descriptions and guides the students in fostering the real time - time learning development (Mahendra, 2023).

Artificial intelligence is the new electrical energy of this era. This AI brings new ways of growth with basic building block for advancement in the sector of education as well as in technology (NG, 2017). This AI brings a new form of technology with advanced application through the new generation of advancement of technology development that charm our youth. Moreover, this progression in technology foster the learning techniques with new ways of learning that affect most advancement in learning (Karsenti , 2019).

2. Literature Review

Most of the studies have explained AI in education and in higher education with innovation of AI in Education sector. The teaching classes will be designed to boost learning capacities of students, emotional intelligence, inspiration, and interaction. This development will enhance the learners critical thinking ability to understand the core content materials (Manyika, 2017). Artificial intelligence has imparted the lo lot of new modern techniques in education sector with this situation lot of transformations can be foreseen in educational field with strong technical innovations by using more and more artificial intelligence in this sector. Artificial intelligence application and systems can help the teachers to improve learning difficulties of learners with personalized learning strategies for foster learning capabilities of students. These learning applications of AI will enhance the learning with personal efforts that could be very helpful for teachers (Sek Eroglu, et al ,2019). Research shows that with artificial intelligence lot of effective individually efforts are taken that support the intelligent learning environments with respect to applications of artificial intelligence that enable the different approaches for learning (Mohammed, & Watson, 2019). Moreover, quality of education is better with participation of human knowledge providers with effective techniques, but artificial intelligence applications predict increasing education quality at all levels especially for providing the way of personalized education that will help both teachers and students in learning procedures (Grosz & Stone ,2018). The role of artificial intelligence in education especially in learning styles the applications and systems of artificial intelligence will help the educators to analyze the leaners with effective strategies in the class of AI supported assistants that will help the educators to provide better knowledge to learners but also increase the communication styles of learners with teachers that will provide the better guidance to learners (Pedro, et al, 2019).

3. Relationship of Artificial Intelligence with Education

The relationship of education and artificial intelligence is interrelated to each other for the development of both sectors. In education sector the advancements that are done by the AI for the betterment of this sector in learning development, in content development and social development of learners the applications of AI have done lot of efforts to boost the learning and development of learning in education sector.

According to the UNISCO the integration of applications of artificial intelligence in the education sector has innovated the learning process and accelerated the learning process with different ways that has done in different areas of the world where AI and applications of AI has brought the new ways in the science of learning. Furthermore, in terms of knowledge and innovation AI applications have developed technological revolutions that help the learners in the development of advanced learning skills with the systems.

Likewise, the development of technologies have also brought the innovations in the field of learning and development where the new content learning skills are developed for betterment of learners and for betterment of education sector by which learners can develop new central ideas regarding understanding of content with innovative ideas where these techniques can did better in development of learning and understanding skills can be made easy (UNESCO, 2023.)

4. Respondents Sample expression by qualifications

In this type of demographic property in which the correspondents are asked to mention their qualification according to given questionnaire the qualification is divided into then three portions first is undergraduate second is graduate and third is doctorate. In universities most of the students are continuing their education. These will be undergraduates and others who are near to completing this will be classified as graduates.

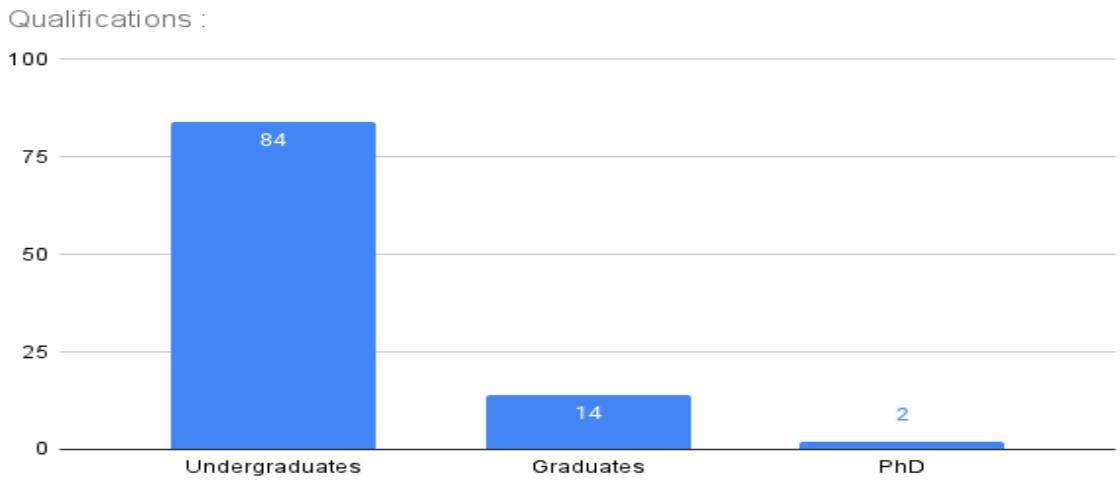

Figure .1. The above diagram shows the results of qualifications of respondents.

In the above graph the qualifications demographic explanation is being explained where quantities of this graph showing the ratios of correspondents. According to this graph three values are given in qualification demographics values which are high ratio, low ratio, and lowest ratio. The above graph shows that 84 % are undergraduates, 14 % are graduates and the remaining 2% are concerned with doctorate students. From the above data it is very clear that most of the correspondents are undergraduates in qualifications and other are graduated and only few are the postgraduate learners in different higher education institutions.

5. Research methodology

In this section of research methodology researchers explain the ways of collection of data making of design, making of tools and explain about the ways of collecting the facts about the topics that will be investigated. The field of social science and educational Sciences it seems to be easy to get data but for accurate measurement it is very difficult to collect and analyze the collected data (Neuman, 2014). In social science field scientists must formulate the way of learning and collecting the data and collecting the truth by the research that is called as social research methodology.

Social scientists selecting the research methods that are on structured practices to establish social facts and these well-disciplined striated ways of collecting the data is known as research methods in social sciences (Blackstone, A 2018). Research methodology supplies knowledge of principles of arranging planning, designing the framework for conducting research process for all ways research methods. Methodological ways are utilized and managed through the different research paradigms and that

paradigm not only provides the way for continuing the research process but also choice to complete the whole research process in different science fields (Sayer, 1992). For this study quantitative research methods are utilized for collection of data from the respondents. This research method is utilized due to the collect the information from the large population.

6. Data analysis

Data analysis is the process by which the large population has been utilized to collect data and after collecting the data the process of analysis is started that will be interpreted through the process of analysis. That collected data will be gathered, managed, standardized, and developed for analysis through the different system -based software for analysis (Russel & Norvig, 2020). The process of data analysis that is also done by secreted samples, unexplored associations, and other significant information's from massive dimensions of data this is being analyzed is called as huge data investigation (Faizan, et al, 2020). For this research study a lot of instruments are used to analyze the data that has been collected from the respondents.

6.1 Findings to wards applications of AI from the respondents of higher educational institutions about the improvement of learning the content areas

The AI applications and data for the AI application collected from university students by sending the questionnaire to them and this question is also explaining performance of learners from the AI applications. This inquiry explains ways of learning with AI applications that are specifically about improvement of learner's learning developmental styles with AI applications. The data for this question is collected from university correspondents from different five universities. showing results of samples that are collected from correspondent regarding AI applications performance in learning contents from AI applications.

That above question also shows response rate of respondents. According to this question that is about the AI applications that have good response rate from respondents whereas total one hundred twenty-one respondents are randomly selected from different universities every question has separate rate of response for this question one hundred fourteen responses are received from respondents. Moreover, this question has positive responses regarding AI applications from respondents.

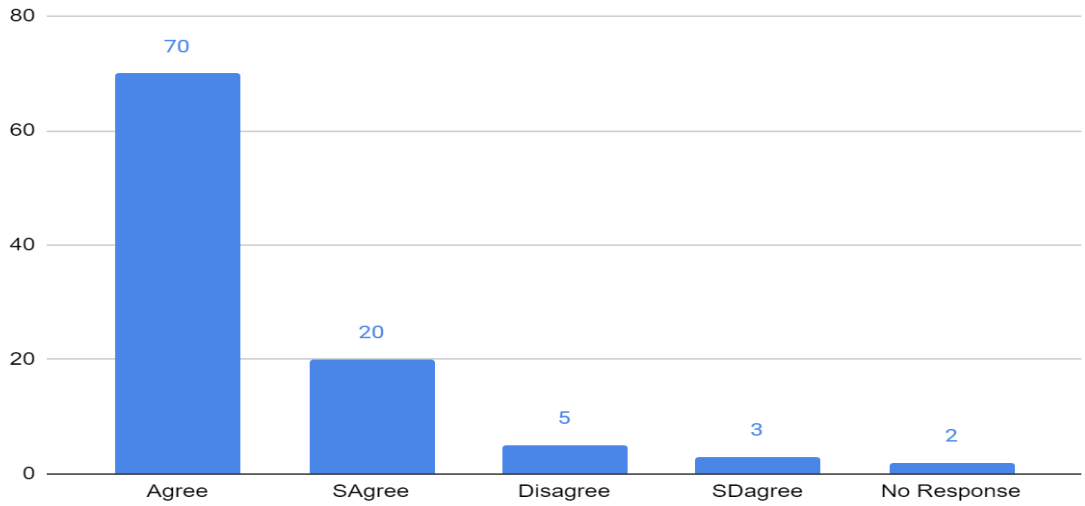

Figure 2. The above figure explains the findings about the AI applications improve learning the content areas.

This question has 70 % responses are in agree with this question whereas 20% are in strongly agree with this question while 5% are in the ratio of disagree with AI applications likewise no response has 2% from the correspondents. This question has 3% by respondents in the option of strongly disagree towards AI applications. Overall, this item has had a positive response from the respondents. Previous research has been operated on AI applications in different fields of education and with different content areas of learning. The study analyzed learning behavior of school students with teachable agent for conceptual development of school students regarding content of mathematics. This study analyzed that with those teachable agents the learning quality of school learners has increased with interaction to teachable agent. Students get more and more ideas about the content of mathematics. This study also found that by utilizing this type of learning styles students can get more knowledge with interesting ways and the curiosity in learning the content. This teachable agent increases the motivational powers of learners and worked on the deep thinking about the learning styles of learners. These teachable agents can produce the vital source of learning among the new learners in the field of mathematics and this study also suggests that by the help of this teachable agent the engagement of learning with this agent increased. (Pareto, L ,2014).

6.2 Analysis towards the AI learning applications from the respondents of higher educational institutions about the effective usage in learning the content

This question is about specific points of AI applications that I asked from university students about AI applications. This question represents the way of learning in style of usefulness in learning procedures. Interactions of learners with AI applications have been measured from university students regarding course learning from AI applications.

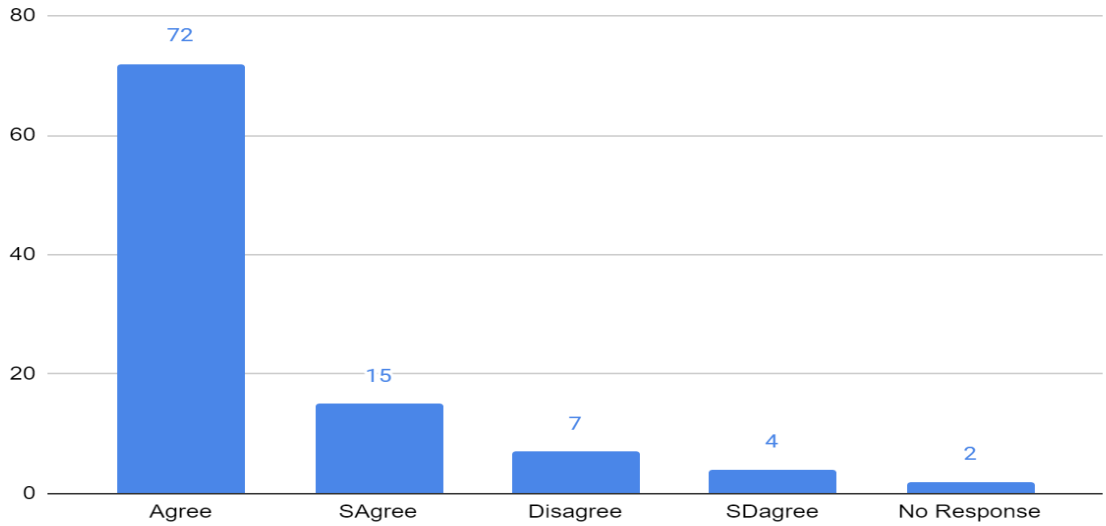

Figure 3. The above figure discovers the results about the AI applications has effective usage in learning the content.

According to this question mostly respondents agree with this question and strongly agree option is in positive sense. This question showing that 72 % have agree with question whereas 15% are showing strongly agree with this question and 7% are showing disagree with this question while4 % showing strongly disagree with this item and other option is no response that have 2% value with this question. These all questions are regarding motivation of respondents towards AI applications with respect to usefulness of AI applications towards learning procedures.

Bygone research papers have identified the role of AI with education system an also found importance of AI with this sector in school, college and in higher education. Most of past papers have highlighted AI in utilizing the systems in providing knowledge with tutoring systems and other AI enabled systems. The study analyzed the IT'S intelligent tutoring systems that are utilized by the learners in development of knowledge regarding teaching and learning. This review study mostly focused on communal information about ITS regarding teaching and learning and effectiveness of ITS in process of providing the knowledge towards learners. This review study has manipulated many studies about teaching systems with respect to evaluation of these ITS systems that how much these systems are beneficial for learners and how much these systems are fruitful for learners in wisdom development (Colby, 2017).

7 Discussion

The findings of this study show the relationship between the AI and higher educational institutions and the importance of AI applications at higher educational institutions with effective to the learners. This study focused on the new developments in learning from AI applications and new trends of learning towards the learners. The importance of AI applications at the higher educational level fosters the new trends in the learning with personalized skills and development of learners learning skills with confidence when learning from AI applications. This study focused on the development of learning techniques in higher educational settings through the rapid development of technologies in education sector.

7.1 Effectiveness of AI applications to develop personalized learning techniques in human beings

The learning systems in higher educational institutions have brought the newness of new learning skills. The personalized learning is also the learning by which the learners can get the customized learning process for each student with weakness, strength, needs and interest of learners. This process of learning will bring the advancement in learning for human beings and develop the new trends of learning in the leaners at higher educational institutions. Each student will learn with interest and the systems can enable the educators to know about the learners, what these students know and what these students must know about the learning content with developed ways of learning (XU, Shuai, et al 2022).

7.2 AI applications are helpful in analyzing the learning needs of human beings at higher educational institutions

AI applications in higher educational institutions have brought new learning styles with effective feedback systems that are generated in the process of learning. The system of feedback will enable the educators to analyze where the learner is showing the lower learning capabilities in learning with different subjects. In the learning systems the major learning process are focused on the devolvement of interest and focusing on the learners needs and development the new learning strategies for learners to gain best knowledge with the application of artificial intelligence and other learning systems that also enable the learner to get more and more content knowledge with effective teaching strategies (Kong, F, 2020).

7.3 AI applications brought Innovation in the cognitive development of human beings in the learning process

The learning process that are utilized by the educators to develop the content development learning with instructions, but the AI applications can bring the new way for development learning styles with effective teaching skills and strategies. The engagement of learners with AI applications can bring the new skills to develop the content learning styles and skills. The effective engagement will develop the interest and effective feedback systems will bring the learners to near the learning skills to understand the more and more content. By leveraging the learners can create more collaborative and dynamic

learning styles with feasible circumstances for learning and this process of learning with AI will bring the critical thinking and problem-solving skills in the learning process of learners (Matsuda, et al, 2009)

8. Conclusion and Suggestions

Teaching and learning are an art to deliver the content through step-by-step process and convert the learner to have the good content learning acquaintance. This system of teaching and learning has the different steps that can be done through the teaching process. Moreover, these steps are followed by the educator to enhance the information that are planning, explaining, and interpreting the questions of students with feedback. These all steps are very helpful in the learning process with the knowledge reflection process.

Likewise, self-reflection and understanding the content are the major ways for explaining and understanding the content rather than memorizing the content. With AI systems the learning abilities and understanding skills are being increased by the systems that are governed by machine learning systems. AI enabled applications have the stuff to provide better ways of understandings. Most of the research works are carried out for encouragement the learning systems.

Most of the research works have given the important findings that AI applications can bring innovative changing in learning systems but lot of other studies have paid attentions to the recommendations for learners to have some trainings for AI applications for effective usage in learning procedure other studies have also the conclusions that there should be proper usage of AI applications for development of learning process with smart content developments with tutoring systems and with AI made systems that will enhance the learning capacities.

Lot of other studies have also neurotic the different points in teaching and learning process that AI systems that work with students learning have the specific ability to determine main weakness of child and will also engage with students to able that learner try to overcome from that learner. Besides this, in the teaching and learning process a lot of efforts must be made to foster the learning systems.

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