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Awareness of Augmented Reality Technology: A Comparative Study

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ABSTRACT

With the access to latest technologies, the education sector is booming and we can provide experiential learning to students. Augmented Reality is one such technology helpful in providing a simulated experience to its users. This is a preliminary study to assess the awareness of Augmented Reality among the prospective teachers of Prayagraj. The methodology of research used is Survey Method of Descriptive Research. The population of the study includes all B.Ed. students of Prayagraj City. The sample consisted of 100 B.Ed. students drawn randomly from (K.P. Training College and Ewing Christian College. Self-prepared 'Augmented Reality Technology Awareness Questionnaire' was used as a tool for the collection of data. t-test was employed for the analysis of the data.

Keywords: Augmented Reality, awareness, prospective teachers

The integration of technology with teaching and learning ensures the enrichment of experiences and procures the desired goals of education. The use of innovative teaching practices bridges the gap between theoretical and practical knowledge. It will be important for educators to develop a new approach to the traditional means of instruction- one that looks at the connection between what is learned in the classroom and what will be needed to compete in a global workforce (Delello, McWhorter & Camp, 2015). The technological advancements in the world of digital media have been important pillars of support for education. Augmented Reality is

a technology that superimposes the user's real-world view with a computer-generated virtual text or image in real-time. In Augmented Reality, virtual data are included in user's physical environment to enable the user to interact with the virtual content (Azuma, 1997). In the field of education, Augmented Reality helps in fostering growth and creativity among students. It is worthwhile to introduce Augmented Reality in the education system and make the teachers aware of its uses and implications. With the help of Augmented Reality, children can get a simulated experience of reality which is otherwise impossible to get in the classroom. Thus, by fusing Augmented Reality and education, deep understanding of various concepts can be developed with much less effort, time and resources. In the era of knowledge explosion where every theoretical information is available in the palm of our hands, it becomes crucial in the field of education to provide the children with an interactive classroom that instills in them real-world practical knowledge. Humans and computers can interact with each other via Augmented Reality (AR) within intelligent environment in realistic settings (Alahmari, 2019). Most of the technological products in the market focus on improving the educational experiences of the students, instructors and managers. Very few products intend to provide personalized educational experience to each student keeping in mind their individual differences. Augmented Reality Technology provides a collaborative and customized display of content or even presents a privatized view of the same content depending on how it is being used. Hence, an eminent need to adapt the technology among the educators arises. This technology certainly helps in attaining a clear understanding of abstract concepts, learning of spatial contents and allows the user get a multi-angle observation of things. Thus, during the pandemic, Augmented Reality Technology gained popularity and is now in transit to become an everyday tool for learning. During practice teaching in the training period, the researcher found that the use of technology in the classroom proved highly engaging for the children. Augmented Reality is one such emerging technology that facilitates its user to experience computer-generated graphics into real environment. Previous researches have shown the use of Augmented Reality in education led to increased learning motivation. Augmented Reality Technology has exemplary use in education and thus pre-service teachers should be aware of this revolutionary technology and trained in its use. Hence, the researcher decided to study the awareness of Augmented Reality Technology among prospective teachers.

Objectives

1. To compare the awareness of Augmented Reality Technology among male and female prospective teachers.

2. To compare the awareness of Augmented Reality Technology among Science stream and Arts stream prospective teachers.

3. To compare the awareness of Augmented Reality Technology among prospective teachers of government-financed institute and self-financed institute.

Hypotheses

1. There is no significant difference in the awareness of Augmented Reality Technology among male and female prospective teachers.

2. There is no significant difference in the awareness of Augmented Reality Technology among Science and Arts stream prospective teachers.

3. There is no significant difference in the awareness of Augmented Reality Technology among prospective teachers of government-financed institute and self-financed institute.

Methodology

The methodology of research used is Survey Method of Descriptive Research. The population of the study includes all B.Ed. students of Prayagraj City. The sample consisted of 100 B.Ed. students drawn randomly from (K.P. Training College and Ewing Christian College. Self-prepared 'Augmented Reality Technology Awareness Questionnaire' was used as a tool for collection of data. t-test was employed for the analysis of the data.

RESULTS AND DISCUSSION

Table 1: Mean, Standard Deviation and t-ratio showing the difference in Augmented Reality Technology awareness between male and female prospective teachers

Group	N	Mean	Standard Deviation	t – ratio
Male	47	29.61	4.51	0.317
Female	53	29.34	4.28	

Table 1 shows that the value of t-ratio (=0.317) is not significant at 0.05 level of significance. Thus, the null hypothesis that "there is no significant difference in the awareness of Augmented Reality Technology among male and female prospective teachers" is accepted which signifies that awareness of Augmented Reality Technology among prospective teachers is not affected by gender difference.

Table 2: Mean, Standard Deviation and t-ratio showing the difference in Augmented Reality Technology awareness between Science and Arts stream prospective teachers

Group	N	Mean	Standard Deviation	t – ratio
Science	46	29.87	4.37	1.055
Arts	54	29.95	4.38	

Table 2 shows the value of t-ratio (=1.055) is not significant at 0.05 level. Thus, the null hypothesis that "there is no significant difference in the awareness of Augmented Reality

Technology among Science stream and Arts stream prospective teachers" is accepted which signifies that awareness of Augmented Reality Technology among prospective teachers is not affected by stream difference.

Table 3: Mean, Standard Deviation and t-ratio showing the difference in Augmented Reality Technology awareness between prospective teachers of self-financed institute and government financed institute

Group	N	Mean	Standard Deviation	t – ratio
Self-financed institution	50	29.90	4.37	1.227
Government institution	50	28.84	4.28	

Table 3 shows the value of t-ratio (=1.227) is not significant at 0.05 level. Thus, the null hypothesis that "there is no significant difference in the awareness of Augmented Reality Technology between prospective teachers of self-financed institute and government-financed institute" is accepted which signifies that awareness of Augmented Reality Technology among prospective teachers is not affected by the institutional difference.

The findings of the present study indicate that there is no significant difference in the awareness of Augmented Reality among male and female prospective teachers. This may be due to the reason that both male and female prospective teachers explore the arena of new technological innovations to improve their teaching-learning strategies and make it more effective. The study further reveals that there is no significant difference in the awareness of Augmented Reality among Science stream and Arts stream prospective teachers as the data has been collected from prospective teachers of urban areas where accessibility of internet and technology is good and they are advanced irrespective of the subject background. Thus, the awareness level is similar for both Science and Arts stream prospective teachers. The study also shows that there is no significant difference in the awareness of Augmented Reality among prospective teachers of self-financed institute and government- financed institute. The COVID-19 pandemic shifted the education sector to online mode of learning. Thus, mostly all the institutions continued their teaching-learning process in a virtual mode and used innovative methods to create impactful learning. This time period was a huge learning opportunity for prospective teachers to learn new technologies and their integration with the curriculum for providing deep, meaningful learning experiences to their students. As technology continues to improve, AR will have a positive influence in education to improve student engagement (Mundy, Hernández, & Green, 2019).

CONCLUSION

The present study has various educational implications for prospective teachers, teacher education institutions and students. The trainee teachers should be motivated to continuously

enhance their teaching methods and make innovative additions such as use of Augmented Reality to boost the interest of students in the classrooms. Educators must work with researchers to develop augmented reality interfaces. Software and hardware technologies play an important and key role to produce augmented reality applications (Kesim & Ozarslan, 2012). The use of Augmented Reality increases the teaching motivation of the teachers as the lesson becomes easier to plan and explain in the classroom. The skill and competency for using Augmented Reality should be developed in the prospective teachers by providing appropriate training. The transaction of course material with the use of Augmented Reality should be added in the teacher education curriculum. Teacher training institutes should introduce study of latest technologies in the teaching learning process so the prospective teachers not only become aware but also learn the use of these technologies in integration with the classroom teaching. To improve the awareness of Augmented Reality among prospective teachers, seminar should be organized on the working and implementation of Augmented Reality.

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