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EFFECTIVENESS OF ICT INTEGRATED CONSTRUCTIVIST APPROACH ENHANCING ACADEMIC ACHIEVEMENT IN URDU

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Abstract

The present study investigated the effectiveness of ICT integrated constructivist approach on students' achievement in Urdu using a pretest - posttest experimental and control group design, with 70 samples grouped as experimental group (35) and control group (35). ICT integrated Constructivist teaching approach was used for the students of experimental group and conventional method of teaching was used for control group. The investigators conducted this experiment over three weeks. 70 students of VIII class were selected through purposive sampling. A self-developed Urdu achievement test conducted to estimate the student`s achievement. The study found that students who were taught with an ICT integrated constructivist teaching approach performed significantly better than those who were taught with the traditional teaching method.

Keywords: *ICT, Academic Achievement, Constructivist Approach, Traditional Method.*

Introduction

Education is a vital factor in the development and progress of human society at large. Education is an important process that develops knowledge, cognition, and intelligence in human life. Education provides the individual with abilities, skills, and strategies in various fields of life. Through this, the individual embarks on the path of psychological development, emotional understanding, and sense of social service, personal upliftment, and economic self-reliance. Education is extremely important for the development of human society. It makes the individual self-reliant, provides him with knowledge of correct policies, values, and culture. It is a reform process that uncovers and develops the hidden abilities of children. Students need complete freedom to prove their dedication, commitment, and knowledge during their education. The teaching and learning environment in schools should create their own opportunities for inquiry, discovery, and learning. In the current educational system, the emphasis is on developing students' ability to think critically rather than having teachers motivate them to learn subject matter by memorizing or rote learning. The goal of today's education system is to ensure that teachers provide information to students, structure the content, organize data, identify problems, organize activities to enable students to process information more effectively, and make rational decisions for high-quality education.

Over the years, there have been clear and remarkable changes in teaching styles. Educational curriculum and teaching methods are changing rapidly. Over time, several schools of educationists emerged and presented various theories of learning. A theory of learning attempts to shed light on the nature of learning. Constructivism is a child-centered approach based on the assumption that learning is a result of the learner's mental construction. In other words, by combining new knowledge with what they

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already know, students create a world of new knowledge. In a constructivist classroom, students work in groups, actively participate in the learning process, and the classroom is interactive and dynamic. There is a strong emphasis on social and communication skills, critical thinking skills, collaboration, and the exchange of ideas. This is in contrast to a traditional classroom in which students work individually, the teacher is the center of the teaching process, learning occurs through rote learning and repetition, and topics are strictly followed by a textbook.

The constructivist school believes that learning is influenced by the context in which an idea is taught, as well as students' beliefs, experiences, and attitudes that also influence learning. Constructivism holds that learning is a constant process of creating new knowledge. (Kumar Lalit, 2014). Teachers organize the learning process according to students' interests and requirements, to encourage to ask questions, to encourage students to think critically, to produce the new ideas, to make estimations and observations, to promote inquiry, to work in collaboration and to test their ideas. (Kim, 2005). Students are inspired and guided to work collaboratively to solve the challenge in such a setting. Students' experiences are considered while developing these tasks. (Rice and Wilson, 1999). “When compared to different traditional learning settings, this approach inspires collaboration among learners in inquiry-based learning atmosphere. Collaborative learning in the classroom setting empowers learners’ voices, cultivates critical thinking, and enhances learning and achievement” (Gerstein, 2013). In light of these aspects, constructivism recommends managing a learning environment that is different from a traditional classroom.

Based on the importance of this approach, NCERT emphasized constructivism in the National Curriculum Framework (NCF)-2005. NCF-2005 recommends a paradigm shift from rote learning to learning by understanding. Keeping in mind the changing needs of learners and society, NCF-2005 focused on adopting a "learner-centric approach" to achieve the desired goal of our education. The National Education Policy (NEP) 2020 has also emphasized on adopting a "constructivist approach" to education. According to the National Education Policy (NEP) 2020, learning should be student-centered, where students actively construct knowledge by engaging with experiences and inquiry-based learning rather than passively receiving information from teachers; this approach prioritizes experiential learning and holistic development of the learner.

Science and technology have completely changed the world. Technology has revolutionized the field of education as well. Technology has opened new doors for development not only in the field of education but also in other fields. In the last two decades, technology has had a profound impact on every facet of social and cultural life and the education system as well. Modern methods such as online learning, distance learning, and e-learning are providing students with access to the best educational institutions in the world. These are opportunities that previous generations were deprived of. Today's student can study anytime, anywhere, from the best teachers in the world. It has the potential to promote universal access to education and bridge the digital divide. Advances in ICT have enabled new forms of access to information. The use of information and communication technology (ICT) in education has completely transformed the nature of education, the responsibilities of the teacher, the role of the student, the learning process and the curriculum.

The use of ICT increases the scope of teaching. Learners can share their work which can promote cultural diversity, have positive motivational effects and raise self-esteem. (Ammanni, S. and Aparanjani, U., 2016). The growing influence and utility of ICT has led education systems around the world to focus on the use of digital technology to give students the skills and knowledge they need to succeed in the 21 century. ICT is the finest attainable visualization medium of constructivist learning theory.

Rationale of the Study

In the current education system many schools follow traditional teaching which is teacher-centered and authoritarian. In this type of teaching, the teacher fills the minds of students with layers of information and the students are expected to memorize this information and repeat it in examinations. The knowledge that students acquire in school is mostly different from their way of thinking and they are unable to use this knowledge in everyday life and solving day-to-day problems. Such information-filled education seems stressful, unpleasant and meaningless to students. To make education effective, there is a need to change the methods of learning in the classroom. Learning can be made very effective by encouraging interaction with students, which increases the level of attainment. Therefore, it is necessary that a teacher adopts new methods and approaches of teaching and encourages the participation of students.

In the present changing scenario, information and communication technology has brought dynamic changes in the society. In the last three decades, technology has dramatically changed every sector of society and every aspect of life. ICT has also made a significant impact in the field of education. Considering its impact and need, ICT today should be integrated in teaching in such a way that it has a positive impact on student learning. Therefore, we need to confirm the effectiveness of ICT in creative teaching-learning so that it can be used effectively.

NCF-2005 has emphasized on adopting constructivist approach in the classroom so that students can construct their own knowledge and understand the concept at the grassroots level. NEP-2020 has also emphasized on adopting constructivist approach and making education child-centered where students actively construct knowledge by engaging with experiences and inquiry-based learning rather than passively receiving information from teachers. This will increase their achievement. Many research findings also confirm that students taught using constructivist approach score higher than those taught using traditional methods. During the review of literature it has been found that very limited study has been done regarding ICT integrated constructivist approach at upper primary level in the field of language especially Urdu. The areas explored so far were Science, Mathematics, Commerce and English Language etc. Based on all these things, the researcher tried to find out how significant impact the constructivist approach has on student achievement as compared to the traditional method. Therefore, in the present study the researcher tried to study the impact of ICT integrated constructivist approach in language teaching especially Urdu teaching at upper primary level.

Statement of the Problem

NCF-2005 has emphasized on adopting constructivist approach in the classroom so that students can construct their own knowledge and understand the concept at the grassroots level. National Education Policy (NEP)-2020 has also emphasized on adopting “constructivist approach” to education that learning should be student-centered where students actively construct knowledge by engaging with experiences and inquiry-based learning rather than passively receiving information from teachers. Constructivism provides students with higher thinking skills which are required in the 21st century. At the upper primary level, language skills and knowledge construction are very crucial which can be achieved meaningfully through the use of constructivist approach (ICON model) of teaching.

Thus, the present study is stated as, “Effectiveness of ICT integrated Constructivist Approach Enhancing Academic Achievement in Urdu”.

Operational Definition of the Key Terms:

- **ICT Integrated Constructivist Approach**

ICT integrated constructivist approach refers to a teaching method where Information and Communication Technologies (ICT) like computers and online tools are actively used to support a learning environment where students actively construct their own knowledge based on their existing understanding, experiences, and exploration, rather than passively receiving information from a teacher.

In this present study various ICT resources in the form of text, images, audio video and animation available in open source are used in the ICON model of constructive approach for teaching and learning.

- **Upper Primary Students**

Upper primary students refer to the students studying in class VI to VIII. In this study the researcher has selected only class VIII students.

- **Achievement**

Achievement refers to the performance of the student in this study. The achievement refers to the score obtained by the student of VIII class in Urdu before and after using the ICT integrated constructivist approach.

Objectives of the Study

- To develop an Urdu language ICT integrated Constructivist Approach lesson plan on VIII class students.
- To study the effect of ICT integrated constructivist approach on the achievement of Urdu language of VIII class students.

- To compare the mean scores of Students' achievement in Urdu taught through ICT integrated constructivist based approach and traditional method of teaching.

Hypothesis

H_{01}: There is no significant difference between the mean scores of Students' achievement in Urdu taught through ICT integrated constructivist based approach and traditional method of teaching.

Delimitations

- The study was delimited to class VIII students of Mau city.
- The present study was conducted on 70 students only.
- The study is delimited to only Government High School.
- This study was delimited within Urdu subject only.

Design of the Study

Experimental design consisting of one control and one experimental group was applied in the present study. Two groups quasi experimental design as follows:

Group	Pretest	Treatment	Posttest
Experimental	O1	X	O2
Control	O3	C	O4

O1, O3: Pretest of Academic Achievement,

O2, O4: Post-test of Academic Achievement,

X: ICT integrated Constructivist based Teaching (Treatment for Experimental group)

C: Traditional Teaching (Treatment for Control group)

A Self-made achievement test in Urdu Language subject was administered to class VIII students. After conducting the pre-test in the subject of Urdu Language, treatment was given. ICT integrated Constructivist approach in the subject of Urdu was administered to the experimental group for three weeks and the conventional approach of teaching module was given to the control group during these three weeks. The post- test was used to measure the students' academic performance after organizing the teaching-learning based on conventional and constructive approach.

Sample

The study consisted 70 students of two sections from class VIII. Researcher selected section 'A' as experimental group and section 'B' as control group. The experimental group was given treatment according to lesson plans prepared using ICT integrated constructive approach and the control group was taught by traditional teaching method. The Purposeful sampling was used to select the sample.

Research Tools

A self-made achievement test was prepared in Urdu subject for class VIII; which was to be used for pre-test as well as post-test and lesson plan for instruction was also prepared by the investigator.

Data Analysis and Interpretation

The objective was to compare the adjusted mean scores of Students' academic achievement in Urdu taught through ICT integrated constructivist based approach and traditional method by considering their Pre-achievement test scores as covariate and the related null hypothesis was, "there will be no significant difference between the adjusted mean scores of Students' academic achievement in Urdu taught through ICT integrated constructivist based approach and traditional method by considering their Pre-achievement test scores as covariate. To test this H0, ANCOVA was applied and results are presented in below tables:

Table 1: Table exhibiting the pretest of Control and Experimental Group

Group	Test	No	Mean	SD	df	t-value	Significant Level
Control	Pretest	35	11.68	2.43	68	0.198	Not Significant
Experimental	Pretest	35	11.80	2.39			

It is evident from the table no. 1 that mean value of pretest of the control group is 11.68 and the mean value of pretest of the Experimental group is 11.80. The t-value is found to be 0.198 which

indicates that there is no significant difference between the experimental group and the control group in their pretest at 0.05 level with 68 degree of freedom as shown in the table 1.

Table 2: Table exhibiting Pretest and Posttest of Control Group

Group	Test	No	Mean	SD	df	t-value	Significant Level
Control Group	Pre	35	11.68	2.43	68	0.317	Not Significant
	Post	35	11.85	2.07			

From the table no. 2, it is evident that mean value in pretest is 11.68 and the mean value of posttest of the control group is 11.85. The t-value is found to be 0.317 which indicates that there is no significant gain in the achievement level in Urdu in the post test of this group at 0.05 level with 68 degree of freedom as shown in the table 2.

Table 3: Table exhibiting the posttest of Control and Experimental Group:

Group	Test	No	Mean	SD	df	t-value	Significant Level
Experimental Group	Pre	35	11.85	2.07	68	10.63	Significant
	Post	35	17.62	2.45			

It is evident from this table no. 3 the mean value of the experimental group in the pre-test is 11.85 and the mean value of this experimental group in the post-test is 17.62. It can be seen that the academic achievement of students in the experimental groups has increased. The calculated t-value is 10.63 found to be significant at 0.05 levels with 68 degree of freedom as shown in the above table.

Table 4: Table exhibiting Pretest and Posttest of Experimental Group

Group	Test	No	Mean	SD	df	t-value	Significant Level
Experimental Group	Pre	35	11.80	2.39	68	10.05	Significant
	Post	35	17.62	2.45			

It is evident from the table no. 4 that mean value in pretest is 11.80 and the mean value of posttest of the experimental group is 17.62. It could be observed that there is a rise in the academic achievement of the students in the experimental groups. The calculated t-value 10.05 is found to be significant at 0.05 levels with 68 degree of freedom as shown in the above table 4.

Findings and Discussions

The ICT integrated constructivist approach proved to have a positive impact on the student's achievement in Urdu. It is also been evident from present analysis that the students who were taught by using ICT integrated constructivist approach performed better than those students who were taught by using conventional method of teaching. Students taught Urdu language by using ICT integrated constructivist methods of teaching showed to have significantly improved in their knowledge, skills, critical thinking, understanding and application abilities. Students have shown significant improvement in their knowledge, skills, critical thinking, understanding and application abilities through various activities performed during the experiment on teaching Urdu language by using ICT integrated constructivist methods of teaching

Adopting ICT integrated constructivist approach in teaching process has yielded positive results. Learners were provided with an opportunity to construct knowledge through activity, discovery, discussion, exploration, which enabled them to be actively and independently think and do something out of the box. Integrating ICT (Information and Communication Technology) into a constructive approach to learning Urdu is highly effective, as it allows students to build their knowledge through active participation, exploration and collaboration during teaching, and significantly improve their language skills by using interactive tools and diverse digital resources, resulting in increased deep motivation and deeper understanding. Learners actively participated in activities like discussion, brainstorming, and cooperative learning in the classroom and performed better in their academic achievements. Integrating ICT within a constructive framework provided students with an active, engaging and personalized learning experience that improved language proficiency and critical thinking skills among students.The result of this study is evident that ICT integrated constructivist approach made a positive impact on the academic achievements of the students.

The findings of this study is congruence with the overall effect of constructivist approaches implemented in other different studies. Studies conducted by Adak, S. (2017), and Parasurama, D. (2017) have revealed that constructivist theory plays an important role in improving students'

achievement. This result is supported by Deepshikha, M. and Mohapatra (2021) who found that ICT integrated pedagogy has prompted the children to perform better than traditional methods. Yildiz & Koçak (2015) reported that ICT integration in the teaching-learning process has contributed very positively to learners achieving high marks. The study concluded that the academic achievement in Urdu language of students taught through ICT integrated constructivist approach was found to be significantly higher than those taught through traditional method, when the groups were matched with respect to their pre-achievement test scores.

Educational Implication

The present study has several implications for teachers, teacher trainers, educational planners, textbook writers as well as educational administrators. The study found that ICT integrated teaching model is more effective in improving students' academic performance and both language skills and higher order thinking skills than the traditional teaching method. By using ICT integrated constructivist approach, student's language skills, problem solving ability and knowledge can be enhanced and improved as constructivist approach emphasizes on students' own learning by linking them with their prior knowledge and experiences. Teachers can be oriented to adopt ICT integrated constructivist teaching approach in teaching various subjects. Language teachers should also use activities related to language skills in their classes as much as possible and ensure participation of all children. ICT integrated constructivist approach can be included as one of the learning strategies in teaching courses in education curriculum by educational administrators so that future teachers can develop skills and competencies in using ICT integrated teaching in teaching. Therefore, the school management should make the internal and external environment of the school suitable for the students' interest in learning and teaching so that children are motivated and encouraged to participate in discussions and learning activities and develop scientific outlook, 21st century skills, exploration and creativity in them.

Conclusion

Constructivism plays a crucial role in interpreting learning outcomes and designing environments to support learning. Constructivism approach in education has become popular as an alternative to traditional process. The National Curriculum Framework (NCF)-2005 has also emphasized on constructivism and recommended the use of constructivist approach in learning process and understanding instead of rote learning in teaching process. The New Education Policy-2020 also emphasized real understanding and scientific method of learning instead of rote memorization. Hence, this study advocates the use of constructivism at every stage of language learning. The present study shows that ICT integrated constructivist learning strategy has a significantly better effect on the academic performance of learners in Urdu language. Furthermore, it is also concluded that the traditional system of teaching is not sufficient to inculcate critical thinking and risk-taking attitude among the present day students. The situation can be better if we adopt constructivist approaches like brainstorming, inductive method, discussion method, cooperative learning, 5Es model, 7Es model and ICON model etc. in language learning. If learners will try to construct knowledge through activity, pondering, searching, discussing they will be active and try to do something new through thinking out of the box because they are constructing their knowledge by their own. If this constructivist method of teaching language integrated with ICT, classrooms can benefit greatly. Urdu language teachers should use ICT integrated constructivist learning model to facilitate learners' language skills and academic performance. Teachers need to develop technical pedagogical content knowledge in their subject to effectively integrate ICT in teaching.

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