



# Use of E-Content for Enhancing the Level of Attainment of Grade Specific Learning Outcomes by 7<sup>th</sup> Grade Students in Geography

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## Abstract:

Educational system around the world is undergoing increasing pressure to use the new information and communication technology to acquaint students with the knowledge and information, they require in this techno savvy era. To develop a knowledge society, it is essential to integrate ICT at all levels of education system. E-content is a very powerful tool of education. It is the latest method of instruction that has attracted attention of learners and teachers of all instruction systems. It is the valuable resource for development of information rich society where everyone, irrespective of caste, religion, race, region and gender bias are empowered to create, receive, share and utilise information and knowledge for their economic, social, cultural and political upliftment and development. The present research paper focuses on the assessment of effectiveness of E-content for enhancing the level of attainment of grade specific learning outcomes by 7<sup>th</sup> grade students in Geography. The study was conducted using experimental method. The findings prove that experimental group students were better than the controlled group students which was reflected in the scores gained by students. Thus, it can be concluded that E-content proves to be very useful tool to bring better conceptual clarity on some abstract concepts for attaining grade specific learning outcomes by students at upper primary stage.

Keywords: E-content, Learning Outcome, Geography

## Introduction :

Preparing students for lifelong learning requires new approaches to education that incorporate technologies increasingly on the part of student's everyday lives. While the importance of reading, writing, and arithmetic still holds true, educators need to look at these and other subjects in new ways, using readily accessible technologies to engage and inspire students to take a more active role in learning.

According to NEP 2020, technology in education will be given major emphasis. This will involve several disruptive technologies that are likely to bring major changes in the way of teaching and learning in institutions. The vision for NEP 2020 is “Technology Use and Integration” to give a pathway for the students to make India a digitally empowered society and knowledge economy around the globe. The integration of ICT will make education accessible to people in remote areas of the country. The technology infrastructure has a major focus on eliminating language barriers, streamlining educational management, and planning, and increasing access to Divyang students.

Integration of ICT and teaching through E-content is a need of 21st-century learners. Geography lessons must be designed, planned, and structured according to the facts, concepts, and skills that allow learners to apply such knowledge to different economic activities within their locality to improve their lives. There are numerous obstacles in the way of geography teachers providing a better geography education. An example of the problems encountered in geography education includes teaching methods based on explaining concepts instead of providing various learning aspects to achieve learning objectives. Hence, the failure to do proper planning in geography lessons prevents teaching activities from being implemented in a productive way. Considering the above challenges, an E-learning strategy seems a viable means for overcoming the learning difficulties experienced by students and teachers in our context.

E-learning covers a wide set of applications and processes including computer-based learning, web-based learning, virtual classroom and digital collaboration. E-learning educates students using learning materials that are fully enriched with multimedia content. Students get self-learning experiences through e-text, audio-video materials, and online lecturers and assess themselves through online self-assessments like quizzes and online exams. E-learning can become more popular in the current scenario where students are more inclined to use information and communication technology (ICT) equipment in their daily lives. E-learning facilitates the learner in terms of any-time learning, anywhere learning, asynchronous interaction, and group collaboration. Schank (2000), and Sambrook (2002) state that E-learning is the information that can be accessed in a setting free from time and place constraints.

While it is thought that E-learning, the development of E-content has a special importance for the time being. The major uses of E-content are:

- (i) to deliver the content via various media such as radio, television, computer, etc.
- (ii) to increase students' concentration on any subject in-depth learning
- (iii) to learn joyfully with active involvement
- (iv) to use the content many times to various groups without hesitation
- (v) to involve multi-sensory to enhance the student's learning capacity
- (vi) to control the students in their learning capacity during content delivery.

E-content act as a powerful tool to clarify the abstract concept of Geography and helps to achieve the desirable Learning Outcomes.

The Learning Outcome is a statement that describes what knowledge, skills, and values learners should have acquired by the end of a subject. Outcomes focus on what the students will know, do, or value when they exit the course program or degree. Note that the focus is on the student rather than the teacher. These are not instructional objectives: they are statements describing the desired abilities of the student concerning the discipline. Learning outcomes must be measurable, achievable, and observable. Outcomes include a verb (or action/behavior) that describes what the student will be acquired to do and demonstrate to assure the outcome has been achieved (think about assessment). Learning outcomes should not begin with subjective or non-measurable verbs such as “know” or “understand”. To be specific, what will the student need to demonstrate to be successful in the subject? Students’ success without outcomes should be measured by assessments. By identifying the desired learning outcomes, corresponding activities, and assessments, both students and educators can know when and how they will be successful.

### **Rationale of the study:**

During the field visit and follow-up discussion with the teachers, it came to the notice of the researcher that most of the students as well as the teachers are facing different types of problems in the teaching-learning process on transaction of the abstract concepts in Geography.

In this regard the integration of e-content in 7th-grade geography classrooms is thought as a alternative approach and supported by substantial research indicating its efficacy in enhancing learning outcomes and promoting student engagement. Numerous studies have demonstrated that e-content, including multimedia elements such as videos, interactive simulations, and digital maps, effectively captures students' interest and stimulates curiosity, leading to increased motivation and engagement with the subject matter (Mayer, 2014; Hwang et al., 2017). For example, research by Clark and Mayer (2016) found that the inclusion of multimedia features in instructional materials improved students' retention of information and facilitated deeper conceptual understanding.

Furthermore, e-content offers accessibility and flexibility that traditional instructional materials may lack, allowing students to access a diverse array of resources and information tailored to their individual learning needs and preferences (OECD, 2015). This personalized approach to learning has been shown to promote higher levels of student achievement and satisfaction (Hattie, 2012). Additionally, interactive features embedded within e-content provide students with opportunities for active engagement and hands-on exploration of geographic concepts, fostering critical thinking skills and problem-solving abilities (Sung et al., 2016).

Moreover, the use of e-content facilitates collaborative learning experiences, enabling students to work together on projects, share resources, and engage in discussions with peers (Ravenscroft et al., 2012). Research has consistently demonstrated the benefits of collaborative learning, including improved communication skills, enhanced teamwork abilities, and increased academic achievement (Johnson et al., 2014).

The integration of e-content in 7th-grade geography classrooms offers a wealth of benefits supported by empirical evidence. By leveraging multimedia resources, promoting personalized learning experiences, and facilitating collaborative learning opportunities, educators can create dynamic and engaging learning environments that empower students to achieve academic success and develop essential skills for the 21st century. So, in this outset, the researcher considered for the study that E-contents can act as a resourceful tool to wipe out this problem. Hence, the researcher takes this problem to find out the effectiveness of using E-content in the teaching-learning process of Geography in enhancing the level of attainment of grade-specific Learning Outcomes by 7<sup>th</sup> Grade students.

### **Objectives of the Study:**

- To assess the level of attainment of grade-specific learning outcomes of the 7<sup>th</sup> Grade student in Geography.
- To use the E-contents in the teaching-learning process of Geography to enhance the level of attainment of Learning outcomes in Geography.
- To study the effectiveness of E-contents in enhancing the level of attainment of grade-specific Learning Outcomes of 7<sup>th</sup> Grade students in Geography.
- To find out the strengths and weaknesses of using E-content for attainment of grade-specific Learning Outcomes by 7<sup>th</sup> Grade students.

### **Hypotheses:**

- There is no significant difference between the mean pre-test score of students taught geography using traditional instruction and students taught using E-content approach.
- There is no significant difference between the mean post-test score of students taught geography using traditional instruction and students taught using E-content approach.

### **Methodology:**

In this study, a collaborative mode of action research was used which enable the researcher and teachers to come together to collaboratively identify the problems that occur during the classroom practice of Geography in 7<sup>th</sup> Grade, to evaluate these problems to understand the underlying causes and to try to find the solution. The study intends to assess the use of E-content in enhancing the Level of Attainment of Grade Specific Learning Outcomes by 7<sup>th</sup> Grade Students in Geography by collecting and analyzing the data both qualitatively and quantitatively. The study was scheduled for 7 weeks starting from Nov 2023 to Dec 2023.

### **Sample of the study:**

The students of Govt UPS Willkishanagar and Govt Practicing UPS of MPL 1 were selected for the study as control group and experimental group respectively. The number of participant sample of experimental group was 16 and control group was 11. The schools were selected randomly for the study.

**Tools & Techniques for Data collection:**

- The study aims to understand the elements and situations in the teaching-learning environment to design a plan of action, use the E-content, and study its effectiveness. So, the data collection tools to be used in this study are –
- E-content links to be used in Geography class for 7<sup>th</sup> Grade. The links were selected and contextualized for use in transactions.
- Test items designed for both pre-test and post-test. The items were based on the objectives of the two geography lessons- ‘Atmosphere’ and ‘Hydrosphere’.
- An observation schedule was developed to observe the classroom process to find out the strength and weakness of E-content approach in geography classroom process. The criteria of the indicators covered all the aspects of the teaching-learning process.

**Pre-test and Post-test tool:** The pre-test and post-test have a set of 10 questions based on grade-specific learning outcomes. Each question carried 1 mark and all questions were compulsory. The pre-test was administered to know the learning level of students and find out the learning gap in geography. The post-test questions were the same as the pre-test and were administered at the end of the intervention.

**Classroom Observation Framework:** The schedule consists of elements of the classroom process integrating ICT through the use of E-content and was observed at regular intervals to find out the pattern of change in students' behaviour and teachers' attitude concerning use of E-content in geography for the attainment of learning outcomes.

**RESULT AND DISCUSSION :****A. Effectiveness of E-contents used for attainment of learning outcome in geography:**

The results obtained from pre-test and post test score of control school and experimental school students were tabulated and analysed by using both descriptive statistics and inferential statistics.

**Comparative analysis of Achievement of learning outcome by 7<sup>th</sup> Grade students in Geography**

The data collected in the form of scores in the Pre-Test and Post-Test was compared and analyzed to evaluate the effectiveness of the E-content for enhancing the level of attainment of learning outcomes in geography. The table representing the data is given below.

**Table 1: Comparison between pre-test scores of control group and experimental group**

Groups	N	Mean Score	SD	Mean Difference	Df	t-value
Control group	11	3.55	0.82	0.27	25	0.52
Experimental group	16	3.81	1.17			

It is evident from the above table that the means of achievement test scores in geography of the control group and experimental group were 3.55 and 3.81 respectively and the values of SD for the two groups were 0.82 and 1.17 respectively. It is further indicated that the obtained t-value of the geography achievement test score is 0.52. The t-value is less than the table value (2.059) at a 0.05 level of significance. Hence there is no significant difference between the experimental group and the control group in their achievement in geography, therefore both the groups as found to be all the most equal as far as their achievement in geography is concerned.

Further the attainment of learning outcome in geography was analysed by using the intervention and the result was analysed as below.

**Table 2: Comparison between Post-test scores of experimental schools and control school**

Groups	N	Mean score	SD	Mean Difference	Df	t value
Control Group	11	5.91	1.51	3.47	25	6.56
Experimental Group	16	9.38	0.5			

From the Table 2, it was revealed that the experimental group achieved a greater mean score i.e. 9.38 than that of the control group i.e. 5.91 after the intervention was given. In other words, the experimental group outperformed the control group in geography. To confirm whether both the groups were different in their achievement performance in geography, the t-test was applied. The t-value 6.56 is less than the table value 2.059 at a 0.05 level of significance and found to be statistically significant indicating there by a significant difference in achievement in geography of both the groups, favouring the experimental group. Hence the hypothesis i.e. There is no significant difference in the mean scores of learning outcomes in geography of 7<sup>th</sup> grade students taught through E-content approach and traditional method is rejected. This result prompts us to conclude that, teaching and learning through the use of E-content has substantially improved the student's achievement in geography as compared to teaching and learning through traditional teaching method.

### **B :Analysis of Classroom Observation:**

The intervention was applied to the experimental group and teaching learning process of the experimental school was observed by focusing on following components of classroom process where E-content has been used. The observation on the basis of the following items based on the components were then analysed qualitatively to find out the strength and weakness of the intervention with regard to attainment of learning outcome in geography.

The E-content were used for 10 lessons covering two chapters i.e. Atmosphere and Hydrosphere. The video shown to the students were contextualised with providing illustrations from real life experience linking to the concept and the observation of whole process was noted down with key points to further analyse it qualitatively.



**Key Findings from the Observations:**

- Throughout the observation, students consistently displayed moderate to high levels of engagement with the e-content. They appeared attentive, focused, and actively involved in the learning activities facilitated by digital resources.
- Instances of engagement were particularly pronounced during interactive activities and multimedia presentations embedded within the e-content. Students eagerly interacted with digital simulations, animations, and videos, demonstrating a genuine interest in exploring the Atmosphere and Hydrosphere chapter concepts.
- A notable finding was the widespread demonstration of enthusiasm and curiosity among students. Many students exhibited excitement and eagerness to learn, actively participating in discussions and asking probing questions related to the Atmosphere and Hydrosphere chapter content.
- Verbal expressions of enthusiasm, such as lively discussions and spontaneous comments, were frequently observed. Additionally, non-verbal cues such as animated gestures and engaged body language further underscored students' genuine interest in the topic.
- Students' active participation in discussions and group activities further indicated their engagement with e-content. They enthusiastically shared their insights, exchanged ideas with peers, and collaborated on tasks related to the Atmosphere and Hydrosphere chapter.
- The depth of students' participation was notable, as they demonstrated critical thinking skills and a willingness to explore complex concepts presented through digital resources.
- The observation revealed instances of collaborative interactions among students, particularly during group activities and discussions guided by e-content. Students actively engaged with their peers, sharing ideas, perspectives, and insights on the Atmosphere and Hydrosphere chapter content.
- Collaborative interactions were observed across various learning tasks, including problem-solving activities, brainstorming sessions, and cooperative learning exercises facilitated by digital resources.
- Students demonstrated a willingness to collaborate and work together to solve problems presented in the e-content. They engaged in constructive dialogue, exchanged information, and leveraged collective knowledge to address challenges and explore solutions.
- The collaborative nature of group activities fostered a sense of teamwork and camaraderie among students, creating an inclusive learning environment conducive to peer-to-peer learning and knowledge sharing.
- The observation revealed that the teacher effectively integrated e-content with traditional teaching methods, seamlessly blending digital resources with face-to-face instruction. The teacher utilized a variety of e-content tools, including multimedia presentations, interactive simulations, and online resources, to complement in-class discussions and activities.
- By combining e-content with traditional teaching approaches, the teacher provided students with diverse learning experiences that catered to different learning styles and preferences.

- Throughout the lesson, the teacher provided clear explanations and guidance to support students' understanding of the Air and Water chapter content. The teacher articulated concepts in a concise and accessible manner, using language that was appropriate for the 7th-grade level.
- Students were able to follow along with the teacher's explanations and instructions, indicating a high level of clarity and comprehension. The teacher's guidance helped scaffold students' learning and facilitated their engagement with the e-content.
- The teacher employed effective instructional strategies, such as asking probing questions and offering real-world examples, to enhance student understanding and engagement with the Air and Water chapter content. Probing questions encouraged students to think critically, analyze information, and apply concepts learned through e-content.
- Real-world examples provided context and relevance to the content, helping students make connections between theoretical concepts and practical applications in their everyday lives. This approach fostered deeper understanding and engagement with the subject matter.
- The observation revealed that students demonstrated a solid understanding of key concepts presented in the e-content. They exhibited the ability to paraphrase information, indicating comprehension of the material. Students were able to articulate concepts in their own words, demonstrating a deep understanding of the content.
- Furthermore, students showed proficiency in applying concepts to real-life scenarios, suggesting that they could transfer their knowledge gained from e-content to practical situations. This application of learning indicates a robust grasp of the subject matter.
- Despite demonstrating overall comprehension, some students encountered difficulties with certain complex topics presented in the e-content. These challenges may have stemmed from the abstract nature of the concepts or the complexity of the content.
- Students struggling with complex topics may require additional support and clarification from the teacher to address gaps in understanding. This could involve providing supplementary explanations, offering additional examples, or engaging in targeted interventions to scaffold learning.
- The observation revealed that multimedia features embedded within the e-content effectively captured students' interest and attention. Elements such as videos, animations, and interactive simulations provided dynamic and visually stimulating content that appealed to diverse learning preferences.
- Students demonstrated heightened engagement when interacting with multimedia elements, showing enthusiasm and curiosity as they explored various concepts presented through visual and interactive mediums.
- Students actively engaged with multimedia features, actively participating in activities and discussions facilitated by these elements. They demonstrated a willingness to explore and interact with digital resources, indicating a high level of interest and involvement in the learning process.
- The use of multimedia features resulted in improved retention of information and deeper conceptual understanding among students. Visual and interactive representations helped reinforce key concepts



and fostered a more profound grasp of the material presented in the Atmosphere and Hydrosphere chapter.

- The observation revealed that the teacher utilized feedback mechanisms to assess student progress and understanding of the Atmosphere and Hydrosphere chapter content. Feedback was provided through various means, such as verbal cues, written comments on assignments, and formative assessments.
- The use of feedback allowed the teacher to monitor student learning outcomes, identify areas of strength and weakness, and tailor instruction to meet individual student needs. Students received timely and constructive feedback, enabling them to track their progress and make necessary adjustments to their learning strategies.
- While feedback mechanisms were utilized effectively, opportunities for student reflection on their learning experiences with e-content were limited. Student reflection involves metacognitive processes that enable learners to assess their understanding, evaluate their learning strategies, and set goals for improvement.
- The absence of structured reflection activities may hinder students' development of metacognitive skills and self-assessment abilities. Providing opportunities for students to reflect on their experiences with e-content can enhance their understanding of the learning process and promote deeper engagement with course material.

The overall learning environment in the 7th-grade geography classroom with the use of E-content was characterized by a positive atmosphere conducive to student engagement and collaboration. Throughout the observation period, students demonstrated a remarkable sense of enthusiasm and eagerness to participate in learning activities facilitated by e-content. Their active involvement in discussions, group activities, and interactive exercises reflected a genuine interest in the subject matter and a willingness to engage with digital resources.

Students exhibited a collaborative spirit, working together to solve problems, share ideas, and support one another in their learning endeavors. Group interactions were characterized by mutual respect, open communication, and a willingness to listen to diverse perspectives. This collaborative ethos fostered a sense of community within the classroom, where students felt comfortable expressing their thoughts and contributing to collective learning experiences.

Despite the overall positive learning environment, occasional disruptions and technical issues with e-content were observed. These disruptions, such as software glitches or internet connectivity issues, momentarily interrupted the flow of instruction and required prompt intervention by the teacher to address. The teacher's proactive response to technical challenges helped minimize disruptions and maintain focus in the classroom, ensuring that instructional goals were met effectively.

**Major Findings:**

- On observations of the data, it reveals that E-content package influenced and encouraged more academic achievement in learning geography compared to traditional methods of teaching.
- Significant differences have been found in academic achievement of students in terms of learning outcome between the experimental group and controlled group through use of E-content.
- Students are showing more interest and attention towards learning geography through E-content.
- It is found that to use and create the E-content teacher must have basic skill of ICT along with interest to do so.
- To empower the teachers for effective use of E content in their classroom they need a constant support and orientation on different ICT tools and a techno friendly classroom.

**Implementations and Recommendations:**

- Implement differentiated instruction strategies to address the diverse learning needs of students, particularly those who may require additional support in understanding complex concepts.
- Incorporate more opportunities for student reflection and self-assessment to foster metacognitive skills and promote deeper learning.
- Provide ongoing professional development for teachers to enhance their proficiency in integrating E-content effectively with traditional teaching methods.
- Ensure reliable technical support and troubleshooting resources are readily available to address any issues that may arise with E-content during classroom instruction.

**Conclusion:**

The present study suggests that the use of e-content for teaching the Atmosphere and Hydrosphere chapter in 7th-grade geography has positively impacted student engagement, interaction, and comprehension of content. By addressing the identified recommendations, educators can further optimize the use of e-content to enhance learning outcomes and provide a more enriching educational experience for students.

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