I. INTRODUCTION

1.1 Introduction

In today's educational system, teachers are continually seeking innovative and engaging ways to enhance the learning experience of their students. **Interactive games** have emerged as a powerful tool, offering both an enjoyable and effective way to teach, engage and assess young learners, especially in primary classrooms. These games go beyond traditional teaching methods and offer a more hands-on, student-centred approach, which is essential for the developmental needs of students.

In primary education, students are still in the process of developing fundamental skills such as reading, writing, numeracy and social interaction. As such, the traditional "one-way" teaching method, where information is solely delivered by the teacher, often fails to capture the attention of young students. Interactive games, however, bridge this gap by offering a dynamic and participatory learning experience.

The development of information and communication technology is currently very beneficial for the community. Mobile is one of the products of this technology that has changed the behaviour of human communication by penetrating space and time. People who are thousands of kilometres away can communicate with each other while looking at the interlocutor on and only by using mobile phones. Mobile phones in which there are various games appear on the market. Playing can be obtained easily through applications on mobile phones and internet media (O'Connor and Andrews 2018).

Game is one of the results of technological developments. Games that were originally played in the real world by interacting with people or objects directly, can now be played in digital form using technology. Game technology has extended to various sectors of life. Currently, games can be obtained easily through applications and internet media. Various gaming technologies will experience phenomenal growth in the future. Various games with more sophisticated technology will emerge (Fadillah and Iqbal 2019).

The culture of playing has become a lifestyle that is much favoured by the community, especially the younger generation at school age, both in rural and urban

areas. Types of play equipment from simple models such as playing with sophisticated equipment such as smartphones, as well as PlayStation consoles are already recognized by today's children. Especially at this time there are many online games that have sprung up which are very popular with children. Online games are games that are connected to the internet network, and can be played with certain rules so that there are winners and losers. Online games are electronic and visual based games. Online games are played by utilizing electronic visual media (Puspitosari and Ananta 2009).

The current generation of Early Childhood is a generation where they are already very familiar with virtual activities or gadgets. For this reason, the use of technology and applications that exist in gadgets is needed to support their education. As it is well known that today's young children are more interested in applications in gadgets than reading books. So that an attractive stimulant is needed for them by engineering gaming applications into learning media that is needed at this time, namely through educational-based games. In this study, researcher used the Educandy game.

Educandy is a web-based application that is used to create quizzes. Thus, educandy games are also included in the category of educational games (Asghar, Haris, and Isyanti 2021) (Ramansyah 2016). Everyone has access to create or play this quiz. In the game there are some interesting pictures, pictures are one of the good media to be used as teaching materials in child development (Utama 2017). With the slogan 'making learning sweeter' (making learning sweeter), the educandy display is made with sweet colours so that it looks cheerful.

Educandy has three core game features, namely words, matching pairs, and quiz questions. However, these three features can be created into several more types of games, such as word search, hangman, anagrams, nought & crosses, crosswords, match-up, memory, and multiple choice (Ulya, Syarif, and Jakarta 2021). Educandy games have many types of word games that can be played, making it easier for educators to create varied quizzes, effective for reviewing students' understanding, make practice questions more fun. The drawback of this educandy is that the quiz maker (author) cannot know the results of the quiz players and requires a stable internet network (Ulya 2021).

Recognizing letters is important to be developed in early childhood for the next child's language skills. By recognizing letters in children, it is hoped that children can understand letters by knowing the sounds and shapes of letters. Basic knowledge of letters can make it easier for children to compose sentences and get information from knowledge sources, both books and other sources (Haira 2019).

Educational media is an important benefit for teachers and students, because the existence of educational media can facilitate student and teacher learning so that the desired goals are achieved (Bond et al., 2018).

Teachers can design and create question banks related to the material taught in lectures to be reused later when teachers make assessments, quizzes or exercises. Interesting and interactive assessments are very helpful to increase students' interest and enthusiasm in dealing with questions. The use of online quizzes to learners is expected to increase learning motivation, so that students acquire material in such a way that it is expected that their learning outcomes are good, because the training provided is suitable for learning. Like quizzes are not boring. Since the quiz contains a lot of word games, this study material is suitable for learning all languages.

Educandy can be used as a tool to capture students' attention during distance learning. It can also be played individually, duel against the computer or duel with friends, all of which can be customized to suit the needs. This research seeks to revisit the development of the Educandy platform as a student learning enhancement for language learning in schools. It is an application that can be used to create interactive learning media. This application can be accessed through smartphones making it easier for students to work through worksheets or quiz-based assessments or questions in this application. On the Educandy page there are also examples of the teacher's work, so that even beginners can get an idea of what the work will be like. Educandy educational game can be defined as a web application used to create fun trivia games. This web application is suitable for increasing students' interest in learning.

1.1.1 The Role of Interactive Games

Classroom transactions refer to the ongoing interaction between teachers and students during the learning process. In this context, **interactive games** serve as both a teaching tool and a method for enhancing classroom interactions, creating an

environment of mutual engagement. These games stimulate active participation, fostering deeper learning while also encouraging essential cognitive, emotional and social skills development.

Interactive Games

- **Engagement**: Young students often struggle to stay focused during long lessons. Interactive games break the monotony of traditional teaching methods, making learning more engaging and fun.
- **Active Participation**: These games shift the focus from passive listening to active engagement. Students are not merely receiving information but actively participating in their own learning process.
- **Instant Feedback**: Games provide immediate feedback on students' understanding, allowing teachers to adjust instruction as needed. Whether it's through answering questions correctly or solving problems collaboratively, students quickly realize what they have learned and where they might need to improve.
- **Encourage Critical Thinking**: Many interactive games require students to think critically, problem-solve and collaborate. These higher-order thinking skills are essential at the primary level, where foundational cognitive skills are developed.
- **Social and Emotional Development**: Many games foster teamwork, communication, and emotional intelligence, which are key components of social development at a young age.

1.1.2 Types of Interactive Games

Interactive games can be tailored to various subjects and learning objectives. Here’s a breakdown of different types of games that can enhance classroom transactions:

1. Knowledge-based Games

Quiz Shows or **Jeopardy-style Games**: Students can answer questions related to the topic being taught. Teachers can customize questions to suit the subject matter, such as math problems, spelling words or historical facts.

- **Learning Outcome**: Reinforcement of factual knowledge and recall.

2. Problem-solving and Critical Thinking Games

Puzzle Challenges or **Mystery Games:** Students work in teams to solve puzzles related to concepts they have learned in class, such as math equations or science processes.

- **Learning Outcome**: Develops critical thinking and collaborative problem-solving skills.

3. Physical and Kinaesthetic Games

Simon Says, **Treasure Hunts** or **Scavenger Hunts**: These activities are great for young learners, as they combine movement with learning, which can help reinforce concepts in a fun, active way.

- **Learning Outcome**: Promotes physical coordination, teamwork and recall of learned material in a hands-on environment.

4. Role-playing and Dramatic GamesCharades, **Storytelling Circles** or **Role-playing Historical Figures**: Students act out various roles or concepts, such as a historical event, a math process or a language rule.

- **Learning Outcome**: Improves communication skills, creativity and understanding of abstract concepts.

5. Memory and Matching Games

Memory Match or **Flashcard Games**: Students match pictures with words, numbers with symbols or questions with answers. These games can be adjusted for different subjects, such as matching animal names with their habitats or matching math problems with their solutions.

- **Learning Outcome**: Enhances memory, recall and conceptual understanding.

6. Team-based Competitions

Spelling Bees, **Math Races** or **Collaborative Quizzes**: Students compete in teams or individually to answer questions or complete challenges in a set time.

- **Learning Outcome**: Encourages teamwork, time management and friendly competition.

1.1.3 Benefits of Interactive Games

1. Improved Student Engagement: Interactive games turn passive learning into active involvement, helping children stay engaged and excited about their lessons. Whether it's a quick quiz or a full classroom game, these activities keep students interested and focused on learning.

2. Enhanced Retention and Understanding: A**ctive learning** through games helps improve retention and understanding. When students interact with the content through play, they are more likely to remember the information long-term.

3. Development of Critical Skills: Interactive games help students develop a wide range of skills that go beyond academics. These include:

- **Communication**: Through discussions, explanations and interactions with peers.
- **Collaboration**: Working in teams promote cooperation and shared decision-making.
- **Problem-solving**: Many games require students to think critically and find solutions.
- **Emotional Intelligence**: Games also foster social-emotional development, helping students learn how to manage emotions and work effectively in groups.

4. Building a Positive Classroom Culture: Games promote a positive and supportive classroom culture. Students become more comfortable participating and taking risks in a low-pressure environment. This encourages a growth mindset where mistakes are seen as opportunities for learning, not failures.

5. Instant Feedback and Adjustment: Teachers can assess student understanding immediately, making it easy to identify learning gaps or areas where

further explanation is needed. This makes interactive games a great formative assessment tool.

1.1.4 Implementation of Interactive Games Effectively

- **Set Clear Learning Objectives**: Ensure that the game is aligned with the lesson's learning goals. Whether it's reinforcing vocabulary, practicing math facts or developing teamwork skills, the game should have a clear purpose.
- **Encourage Active Participation**: Ensure every student has an opportunity to participate. Rotate roles and encourage everyone to contribute, whether it's answering questions or acting out a role.
- **Keep the Atmosphere Positive**: Games should be about fun and learning, not about winning or losing. Create an atmosphere where students feel comfortable making mistakes and learning from them.
- **Provide Feedback**: After the game, give students constructive feedback. Discuss what went well and what could be improved and connect the game to the key learning points.
- **Adapt to Different Learning Styles**: Some students may benefit more from visual games (like Pictionary), while others may excel in auditory games (like story-telling or discussions). Use a mix of different types of games to engage all learners.

Interactive games have revolutionized the way primary teachers approach classroom transactions. These games not only make learning fun but also encourage active participation, social interaction and the development of critical skills. By incorporating these games into the teaching process, educators can foster a dynamic and student-centred environment that supports both academic growth and personal development.

Incorporating **interactive games** in the classroom provides a multifaceted approach to learning, making it possible to meet the diverse needs of young students while keeping them engaged and motivated. Ultimately, these games help transform classroom transactions from a traditional, one-way transfer of knowledge to an interactive, collaborative and enjoyable learning experience for all.

1.1.5 Educandy

Educandy is an innovative educational app that helps teachers and students create engaging learning activities. Designed to make learning more interactive, Educandy allows users to generate quizzes, word games, and other fun exercises effortlessly. Teachers can input their lesson content, and the platform automatically transforms it into interactive games that students can play on computers, tablets, or smartphones.

One of the key features of Educandy is its simplicity. Educators do not need advanced technical skills to use the app. By simply entering words, questions, or matching pairs, the app generates games such as anagrams, word searches, and memory games. These activities make learning enjoyable and reinforce knowledge in an engaging way.

Educandy is especially useful for language learning, vocabulary building and subject revision. It supports various game formats, allowing students to practice in a fun and stress-free environment. Additionally, it promotes independent learning by enabling students to access games anytime and anywhere.

Another advantage of Educandy is its flexibility. Teachers can create customized activities that cater to different learning levels and subjects. Moreover, the app allows for collaboration, as students can compete or work together in multiplayer modes.

Educandy is a valuable tool for modern classrooms, making learning interactive and enjoyable. By combining technology with education, it enhances student engagement and motivation, making lessons more effective and memorable. Whether for classroom instruction or remote learning, Educandy is a great addition to any educator's toolkit.

Educandy App is an interactive learning app that allows educators to create engaging educational games in minutes. By simply entering vocabulary words or questions and answers, the app transforms content into fun activities like quizzes, word searches and memory games.

Once a game is created, a unique code is generated, which can be shared with students so they can play on their own devices. The app is available on multiple platforms, including Windows, iOS, and Android.

There are tons of interactive educational games children can use to add more fun to learning and studying. Specifically for younger students, these digital tools can truly help enhance both recall and retention while keeping their attention. When it comes to educational games for students, it's all about simplicity both for the children using the game and for the teachers who help facilitate those experiences. All activities are easy and the fun games help provide effective reviews for any kind of classroom content.

Essentially, Educandy is an online review tool students can use to master concepts and prepare for exams. It's geared a bit more towards younger students, making its prime target the primary students. Using this simple software, educators can create review games in just a few short minutes. It's as easy as entering all questions and answers and the Educandy platform does the rest. In just a few quick steps, it can help turn teacher-provided content into interactive activities for kids to use in their review games or for independent studying. They can even embed those learning games on their school website page or onto their personal online page for students and parents to easily find.

Children could use Educandy independently or as part of group activities. Since it's accessible on a variety of devices, they can play review games at home and on their own time. Teachers can also use Educandy in the classroom to facilitate group reviews or create competitive games among students. In the classrooms, Educandy works well when teachers project the proceedings on interactive whiteboards or another viewing surface. This creates a solid group learning experience and allows students to take part in some dynamic studying. So, whether teachers want to create a matching vocabulary quiz or create an Educandy word search for students, this system is super simple and effective.

Spelling to memory games for students

There are many different types of review games children can access with the Educandy app. They include cool word searches, noughts and crosses, crosswords, spelling, anagrams, match-up, multiple choice, and even memory games. Students

access the games after their teacher has created them simply through the Educandy app or through the Educandy website directly on their computer. Whichever games they choose, teachers can input the content they want students to know and let them get to work! In the spelling game, for example, students must provide the correct answers (with correct spelling) to the questions. They can do so by selecting the letters on the keyboard and correct guesses will fill in on the screen. If they guess incorrectly, a chunk will be taken out of the on-screen candy bar.

Each game provides the opportunity for simple but effective content reviewing. It's also incredibly easy for teachers to get started. All they need to do is create an account on the Educandy website and sign in with just a username and password. Then, they can begin creating their activities and review games right away. Whether students utilize iOS, Android, or Microsoft devices, they can access the Educandy mobile app as well. Whether on a mobile device or desktop, the users can enter their activity code right on the Educandy homepage. Then, students can begin to play educational games and interact with both digital content and their peers right away.

Educandy learning apps

There are two Educandy learning games available one for kids and one for instructors. Educandy Play is the student version, which is available on iOS, Android, or Microsoft devices. With the Educandy Play app, students can access games their teachers have created on the Educandy platform. All teachers have to do is share their activity code with students so that they have it to enter when they launch this app. This helps them easily locate activities and get started with reviewing core concepts or exploring new ones. Plus, with recent updates to the Educandy apps, they're now more intuitive and easier for students to navigate.

Then, there's the Educandy Studio app, which is for teachers. Using this platform, educators could make learning games for students with ease. It takes only minutes for them to create online games for students since all they need to do is enter the information they want included. After inputting some parameters like vocabulary words or questions, the Educandy system reconfigures that information into interactive review activities for students to use in their classroom or at home. All

educators have to do is download the app (iOS, Android, or Microsoft) and log in or create their free account.

Educandy sounds like a valuable tool for helping the elementary children review key concepts in almost any subject, it definitely encourage learners to go and check it out. It's completely free and the website is super simple to navigate.

Features of Educandy

- **Game-Based Learning** – Educators can create games like word searches, crosswords, anagrams and quizzes.
- **Easy Content Creation** – Simply enter vocabulary words or questions and the app converts them into interactive activities.
- **Multi-Platform Access** – Available on Windows, iOS and Android, ensuring accessibility for students and teachers.
- **Unique Game Codes** – Each game generates a unique code that can be shared with students for easy access.
- **Customizable Activities** – Users can upload images and sounds to enhance their games.
- **Interactive Whiteboard Compatibility** – Games can be played on individual devices or projected onto an interactive whiteboard for classroom engagement.

Educandy games more engaging and effective

- **Use a Variety of Game Types** – Mix up quizzes, word searches and anagrams to keep students interested.
- **Incorporate Multimedia** – Add images and sounds to make the games more interactive.
- **Encourage Student Participation** – Let students create their own games to reinforce learning.
- **Make it Competitive** – Use leaderboards or timed challenges to boost engagement.
- **Align with Learning Goals** – Ensure the games support the curriculum and learning objectives.

Engaging Educandy games teachers and students

- **Crossword Challenges** – Create crosswords using key vocabulary words to reinforce learning.
- **Memory Match** – Pair related terms or concepts to help students recall information.
- **Anagram Puzzles** – Scramble words and challenge students to unscramble them.
- **Multiple-Choice Quizzes** – Test knowledge with fun, interactive quizzes.
- **Word Searches** – Help students find hidden words related to a topic.
- **Noughts & Crosses (Tic-Tac-Toe)** – A twist on the classic game where correct answers earn a move.

Creating own games on Educandy

- **Sign Up or Log in** – Visit Educandy and create an account or log in.
- **Choose a Game Type** – Select from options like quizzes, word searches, anagrams, or matching pairs.
- **Enter the Content** – Input vocabulary words, questions, or answers, and Educandy will automatically generate the game.
- **Generate a Unique Code** – Once the game is created, Educandy provides a unique code that teacher can share with students.
- **Play and Share** – Students can play the game on their own devices or on an interactive whiteboard.

Key elements of game

- **Meaningful Choices** – Players love feeling like their decisions matter. Whether it's strategic gameplay, branching narratives, or skill-based mechanics, giving players the ability to shape their experience enhances engagement.
- **Smooth and Intuitive Controls** – A game should feel fluid and responsive, minimizing frustration and ensuring players can focus on the fun.
- **Progression and Rewards** – Well-balanced difficulty curves, skill upgrades, achievements, or collectibles make players feel accomplished and keep them coming back for more.

- **Compelling Storytelling** – If the game has a narrative, a strong story with memorable characters and emotional depth can make a huge difference in how invested players feel.
- **Dynamic Challenges** – Whether through puzzles, enemies, or environmental obstacles, offering varied challenges keeps gameplay fresh and interesting.
- **Replay ability and Player Freedom** – Games that allow different playstyles, multiple endings, procedural generation, or sandbox elements encourage exploration and long-term enjoyment.
- **Social and Multiplayer Aspects** – Competitive or cooperative elements, leader boards, and engaging online communities can enhance a game's longevity.

1.2 Need and Significance of the study

This research essentially promoted innovations in teaching and learning process and also that encourage teacher engagement with technology. Interactive games can capture students' attention and foster a more positive attitude towards learning. Interactive games have become indispensable instruments in modern education, particularly at the primary level, when student involvement and motivation are critical to learning success. Traditional teaching methods frequently fail to capture young children' different learning styles, demonstrating the need for more dynamic and inclusive approaches. Incorporating interactive games into classroom transactions gives students hands-on pleasant experiences that encourage active involvement and improve learning of many subjects. ·Interactive games can help students develop critical thinking, problem-solving, creativity and collaboration skills which are essential for success in today's world.

This research is required to provide primary teachers with the abilities needed to create and administer these games effectively, particularly in core disciplines such as maths, language, science and social science. ·The development and implementation of interactive games can provide opportunities for primary teachers to enhance their pedagogical skills and explore innovative teaching methods. Interactive games is needed for the teachers in order to analyze the various levels of their feedback level before and after the training.

The researcher chosen this topic because there are hundreds of literatures and studies in the same field. Hence the researcher would like to find out the Interactive games among the Primary teachers.

1.3 Objectives of the study

- To identify variety of interactive games among primary teachers in their classroom teaching.
- To explore creative ways to incorporate interactive games into classroom transactions for Language, Mathematics, Science and Social Science.
- To develop the utilization of interactive games in teaching among Primary teachers.
- To find out the effectiveness of interactive games to improve Teaching-learning process among Primary teachers.

1.4 Hypotheses

- There is no significant difference among teachers in using variety of interactive games before and after training.
- There is no significant difference between male and female teachers in using variety of interactive games through training.
- There is no significant difference between education district-wise teachers in exploring creative ways to incorporate interactive games in classroom transactions.
- There is no significant difference between Secondary Grade Teachers in PUPS and PUMS in effectiveness of interactive games.

1.5 Delineation and Delimitation of the Research

The following delimitations were taken into consideration in the interpretation of results.

- The study was confined to 40 primary teachers only.
- The study was focused on Language, Mathematics, Science and Social Science.

- This study was focused on classroom-friendly games.
- This study was focused on basic teaching competency and willingness to innovate.
- The samples were experimentally treated with Educandy App only.
- The study was conducted on dependent variables were Educandy App.

1.6 Organisation of the Research

The present study was organized into a sequence of systematic stages to successfully design, implement, and evaluate the integration of interactive games for classroom transactions. The major stages of the research are outlined as follows:

Stage 1: School Visit and Pre-test Administration

- Initial visits were conducted to selected primary schools.
- Pre-test was administered using a questionnaire to assess teachers' basic skills, creativity levels, and familiarity with interactive games.

Stage 2: Development of the Training Module

- Based on pre-test findings, a training module was prepared.
- The module included content on interactive games, Educandy App features, and subject-wise integration techniques.

Stage 3: One-day Orientation Training Programme for Teachers

- Introduction of Educandy App.
- Hands-on practice sessions were provided for creating activities for languages, maths, science and EVS.

Stage 4: Intervention Activities – Educandy App Creation

- Teachers participated in guided intervention activities.
- They created their own interactive games using Educandy App, exploring new ideas.

Stage 5: Integration of Educandy App across Subjects

- Teachers applied their newly developed skills to integrate interactive games in various subjects such as Language, Mathematics, Science and EVS.
- Subject-specific tasks and Educandy App activities were practiced.

Stage 6: Field-level Implementation in Classroom Transactions

- Teachers implemented the created Educandy App activities in real classroom settings.
- Classroom teaching–learning processes were enriched through Educandy App activities.

Stage 7: Observation of Student Activities

- Student responses, engagement levels and learning behaviours were observed using a structured observation format.
- The observations helped to evaluate the effectiveness of interactive games for classroom transactions.

This organization enabled a systematic exploration of how Educandy App activities enhances teaching and learning processes in primary education.

II. REVIEW OF RELATED LITERATURE

2.1 Introduction

The review of literature describes the selection of the topic, formation of hypothesis and deductive reasoning leading to the problem. The first focus of the review of literature is the importance of studying selective developing interactive games for classroom transaction among primary teacher. It helps to get a clear idea and supports the finding with regard to the problem under this study.

The review of literature concluded with a summarization of the key points that the researcher considered while designing the study of methodology. This includes a discussion of the limitations of previous researches and hypotheses of the study. This chapter is a step to get full picture of what has been done and said with regard to the problem under this study. The review of literature is given as follows.

2.2 Studies related to International, National, Local (Year wise)

International Studies

Manar S. Alotaibi (2024) Game-based learning in early childhood education. This study was investigated the Game-based learning has gained popularity in recent years as a tool for enhancing learning outcomes in children. This approach uses games to teach various subjects and skills, promoting engagement, motivation, and fun. In early childhood education, game-based learning has the potential to promote cognitive, social, and emotional development. This systematic review and meta-analysis aim to summarize the existing literature on the effectiveness of game-based learning in early childhood education. This systematic review and meta-analysis examine the effectiveness of game-based learning in early childhood education. The results show that game-based learning has a moderate to large effect on cognitive, social, emotional, motivation, and engagement outcomes. The findings suggest that game-based learning can be a promising tool for early childhood educators to promote children's learning and development. However, further research is needed to address the remaining gaps in the literature. The study's findings have implications for

educators, policymakers, and game developers who aim to promote positive child development and enhance learning outcomes in early childhood education.

Paraskevi Mikrouli, Katerina Tzafilkou & Nicolaos Protogeros (2024) Applications and Learning Outcomes of Game Based Learning in Education. This study was considered the most engaging means of learning and brings several benefits as regards the learning outputs. Game-based learning is applied in all different educational stages from pre-school education to tertiary education, and workplace. This review study discusses and extends previous findings by organizing the application of GBL approaches in different educational stages and presenting the main learning outcomes. The review study collects and analyzes 104 scientific papers ranging. The benefits and limitations of GBL are also discussed in the paper, while different types of games including augmented reality (AR) approaches are considered. According to the findings, in primary and secondary education, GBL demonstrates a positive impact on learning outcomes and engagement, enhancing students' understanding of complex concepts and fostering real-world application of learned knowledge. While GBL in tertiary education facilitates deeper understanding, critical thinking, and skill development, its implementation requires careful design and evaluation aligned with learning objectives. The study also explores various types of GBL games, including memory, simulation, interactive, quiz, puzzle, strategy, and reality-testing games, each tailored to different educational objectives and subjects. Furthermore, Augmented Reality (AR) in GBL shows promise across subjects but faces challenges like technical limitations, training needs, privacy concerns, potential distractions, and a lack of comprehensive research on its efficacy. Overall, while GBL demonstrates considerable potential in enhancing education, its successful implementation requires careful consideration of age-appropriateness, varied game types, and integration of emerging technologies like AR.

Ima Kusumawati, Fariza Wahyu Arizal and Arif Sutrisno (2023) "Primary Student and Teacher Game Based Learning Engagement: The Problem and the Challenge" This study was designed to investigate the teacher and student engagement are critical factors that have a significant impact on the learning process. The use of educational games has been shown to make learning more interactive and fun, while also promoting a sense of motivation and engagement among students. This study aims to investigate the factors that influence student and teacher

involvement in game-based learning and how to minimize the potential problem during the classroom intervention. In this preliminary study, the investigators employ a literature review method to find the correlation between teacher and student perspectives in games, and how game-based learning potentially can improve this engagement. Research has found that teacher and student engagement are crucial factors in the learning process and that teachers play a vital role in promoting student engagement. Students who view games as relevant to their learning goals tend to be more engaged and motivated to learn. When teachers view games as a valuable tool for teaching and learning, they are more likely to incorporate them into their instruction and create opportunities for students to use them. This, in turn, leads to increased student engagement, motivation, and learning. Additionally, the use of games in the classroom has the potential to enhance the learning experience for both teachers and students. A key purpose for this review is to provide a framework that teachers might use to construct effective classroom engagement pedagogies.

Rezi, M., Quintana, J., Dominic, J., Darius, L. (2023) Development of Educandy Platform as an Educational Game to Improve Arabic Language Learning Achievement. This study was found to explore Game-based learning is certainly very favoured by students, especially nowadays games in learning do not need to be done in the classroom using a cellphone. One application that can be developed to improve student achievement is the Educandy platform. The purpose of this research is to develop the Educandy platform as a learning media in improving Arabic language learning achievement. The method used in this research is research and development method with ADDIE model. The results of this study indicate that the Educandy platform is able to improve student achievement so that students are happy in learning Arabic. The conclusion of this study can be seen that the use of the Educandy platform as an educational game in learning Arabic can support the learning and teaching process. The limitation of this research is that researchers only make Arabic language games at the junior high school level so that the game cannot be developed as a whole, for that the researcher hopes that the next researcher can do the same research and be practiced at boarding schools where there is more knowledge about Arabic lessons.

Siti Nurjanah, Leli Fertiliana Dea, Muhammad Saidun Anwar (2022) Development of Games Online Features Educandy to Children Aged 5-6 Years. The

aim of this study is to determine the recognizing letters is important to be developed in early childhood for the next child's language skills. By introducing letters to children, it is hoped that children can understand letters by knowing the sounds and shapes of letters. The learning media that will be developed in this research is an online game on the educandy. The purpose of this study was to determine the development of online games on the educandy to introduce characters to children aged 5-6 years at KB Darul Falah Terbanggi Besar. Types of research and development (research and development). The development procedure according to the Borg and Gall theory consists of seven stages, namely potential and problems, data collection, product design, expert testing, product revision, product testing, and product revision. Based on the results of the study, it can be concluded that, games feature educandy to introduce script to children aged 5-6 years at KB Darul Falah Terbanggi Besar, the development of online game feature educandy children are able to name symbols of letters that are known, children are able to recognize the sound of the initial letters of the names of objects in the vicinity. The Effectiveness of Using Online Games Features Educandy to Improve Literacy Skills for Children aged 5-6 years, namely after research was conducted at the Darul Falah Family Planning Terbanggi Besar, it was proven that the literacy abilities of early childhood can be categorized as starting to develop.

Xin Guan, Chunmei Sun, Gwo-jen Hwang, Kegan Xue & Zhuo Wang (2022). Applying game-based learning in primary education. This study was conducted to Play is crucial to children’s development. With the prevalent use of digital technologies, children and young adults are seen playing games more often and longer on digital devices. How should teachers capitalize the advantages of games in class, without inducing more health risks or problems for children? To achieve this goal, teachers need empirical details and conclusive results in the application of game-based learning (GBL) in primary education, so that they can design GBL experiences that cater to the specific needs of pupils. The present paper provides a systematic review for 35 experimental studies that substantially integrated gaming elements in primary school lessons. Major findings include that (1) most studies were published in technology assisted learning journals, focusing on higher-grade students’ natural science learning, through one GBL lesson conducted within one week; (2) theoretical foundations were absent in the majority of studies, with the rest implicitly or explicitly drawing upon Constructivist premises; (3) adopted GBL technologies were

mostly self-designed, and used for formal learning; (4) Gamification was the most frequently used game genre and Intellectual Problem-Solving was the top gaming element to be incorporated and (5) there were more positive outcomes than mixed findings and more cognitive results reported than affective or behavioural dimensions.

A. Letina (2021) Game-based learning in primary science and social studies. This study was found to play is a natural form of learning that contributes to a child's development. Previous research on the effectiveness of game-based learning has found that using games in teaching leads to greater activation of students in the learning process and contributes to creating a positive classroom environment. Game-based learning increase students' attention and thus more effectively contribute to the achievement of educational learning outcomes and the development of student`s competencies. As a teaching strategy with elements of cooperation, game-based learning is essential at all levels of education, especially in primary grades. In primary classes, games can be used to learn new teaching content, practice specific social skills, socialize students, or improve the classroom environment. By applying methodically designed games, students often achieve better results in the learning process. The game as a form of formative evaluation enables discovering students' abilities and giving quality feedback on their learning process. Didactic games can be applied in all segments of primary science teaching -to motivate students, learn new content and practice skills, formative and summative assessment of student achievements, high levels of learning outcomes. This paper presents the results of research whose main goal was to determine the attitudes of primary school teachers (N = 349) on the possibilities of applying game-based learning in Science and Social studies classes, advantages and possible disadvantages of gamification in this school subject in the first four grades of primary school in Croatia, and the frequency of application of different forms of games during teaching. Research has found that teachers generally use game-based learning once to twice a month to motivate students and practice skills, but very rarely for formative assessment. Although they expressed positive attitudes on the game-based learning strategy, there is a weak correlation between their attitudes on using this teaching strategy in Science and Social studies teaching and the frequency of their application. They are more likely to use games that are easier to implement and those that achieve lower levels of cognitive learning outcomes such as memorization and less likely to use games that are more time-consuming or games that require higher levels of cognitive learning

outcomes, analysis, evaluation, and creation. Therefore, in the future, the teachers should be sensitized for more frequent and purposeful use of game-based learning, contributing to the complete development of student competencies, especially for formative assessment, and achieving a higher level of learning outcomes.

Adipat, S., Laksana, K., Busayanon, K., Asawasowan, A., & Adipat, B. (2021) Engaging students in the learning process with game-based learning: The fundamental concepts. This study was found out to a new approach to learning in the form of educational games has been adopted in recent years, especially in English language teaching. The educational game learning approach used to teach English to non-native English-speakers who use English as a second or foreign language has recorded great success. This study provides an innovative framework for the adoption of the educational games learning approach at university. This is done to ensure lifelong learning and interdisciplinary learning opportunities for students. The study introduces social skills and knowledge training to address topics of gaming and learning. It describes the point at which learning is expected to occur and the role that game elements play in relation to student engagement and educational gaming content interaction. The study further describes the principles governing collaborative learning. The contribution of game-based learning is further linked with mind-set improvement and growth. The study further examines three theories that are essential to the development of the game-based learning approach: narrative-centered learning theory, problem-solving theory, and engagement theory. Upon providing the theoretical underpinnings, teachers' perceptions towards the game-based learning approach are further addressed in the paper. The advantages and disadvantages of game-based learning are also discussed.

Liping Sun, Heli Ruokamo, Pirkko Siklander, Baoping Li and Keith Devlin (2021). Primary school students' perceptions of scaffolding in digital game-based learning in mathematics. This study was found to explore approaches to teacher scaffolding in digital game-based learning in primary mathematics classrooms as well as the effects on students' perceptions of learning in a digital game in which scaffolding was provided. A total of 141 primary school students and four mathematics teachers participated in the experiment, and qualitative data were collected through classroom observations and student interviews. The results identified whole-class and one-to-one scaffolding strategies, both of which had an

important effect on students' learning activities and perceptions of mathematics in the context of digital games in primary education.

Vankúš, P. (2021) Influence of game-based learning in mathematics education on students' affective domain: This study was conducted to modern education nowadays, the use of game-based learning as a teaching and learning method is popular in all school subjects, including mathematics. There are numerous studies dealing with the influences of this teaching method on the students' achievements. Modern teaching theories consider an important effect of education on the development of students' affective domain, connected with the subject and its teaching. In this work, the author studies journal articles that the use game-based learning in mathematics to assess its effects on the students, with the aim to analyse its impact on students' affective domain. To achieve this, a systematic review with the use of a PRISMA statement is applied. The data sources are 57 journal articles from the area of interest listed in the Web of Sciences and Scopus. The results indicate that 54% of the articles consider the affective domain in the measurement of the effects of game-based learning in mathematics education. These articles report mostly (84%) the positive influences of game-based learning on students' motivation, engagement, attitudes, enjoyment, state of flow, etc. The rest of the articles show mixed results, with the authors' conclusions possibly affected by flaws in the research instruments, selection of study groups, and game design, therefore, stressing the importance of these elements in future research on this topic.

Acquah, E. O., & Katz, H. T. (2020) Digital game-based L2 learning outcomes for primary through high-school students. The aim of this systematic literature review was to examine the empirical evidence for the effectiveness of digital games on second language learning between 2014 and 2018, with a focus on participants 6 – 18 years old. The initial search yielded 578 results, from which a total of 26 articles were included in the final content analysis. The analysis of the included studies revealed: the majority of studies were conducted with a mixed methods design; most studies used computers as the gaming platform; the most common game genre was educational games or educational mini games; most games were designed for learning; research was mainly conducted in East Asia and the Middle East; the primary context of study was within a formal learning environment; and the target language was usually English. Further analysis suggests that digital learning games

(DLGs) may benefit players' language acquisition, affective/psychological state, contemporary competences, and participatory behaviour. An inductive analysis revealed six key game features highlighted within the studies that influenced the outcomes: ease-of-use, challenge (at one's zone of proximal development), rewards and feedback, control or autonomy, goal-orientation, and interactivity. In addition to game features, associations between context and outcomes were also explored: studies conducted within a formal learning environment, with or without teacher facilitation, resulted in mostly positive language acquisition results, meaning DLGs can be implemented successfully within schools. Based on the overall findings, it is clear that DLGs are an effective tool, but future research should explore how they can best be implemented in the classroom setting.

Chen, CH., Shih, CC. & Law, V (2020) The effects of competition in digital game-based learning (DGBL). This study was examined to Digital game-based learning (DGBL) is known to be widely used for improving learning in various fields. Among the elements of DGBL, competition has been very controversial. This meta-analysis, which included 25 articles written between 2008 and 2019, revealed that DGBL has produced improvements for learning outcomes with an overall effect size of .386. In addition, the investigator explored multiple moderators to understand how competition in DGBL influenced student learning for different learners, contexts, game types, and learning outcomes. They found that competition in DGBL was effective for math, science and language, but not for social science and other subjects. It was effective for K12 students and college students. It was effective for puzzle, strategy, role-playing, and simulation, but not for action games. Finally, competition in DGBL was equally effective for cognitive and non-cognitive outcomes. Through the results of this study, they fill a critical gap in the research left by recent reviews, which do not examine the role of competition; a key gaming element. In addition, they offer a number of suggestions for future studies.

Korkmaz, Ö, & Öztürk, Ç. (2020) the effect of gamification activities on students' academic achievements in social studies course, attitudes towards the course and cooperative learning skills. The aim of this study is to determine the effects of educational games on students' academic achievement, attitudes towards the course and cooperative learning skills. Semi-experimental research design with pre-test post-test control group was used. The study group consisted of 60 students at 5th grade

secondary school. In this process, the topics identified were reinforced by educational games in experimental group and control group were strengthened by traditional methods for 6 weeks. Research data were collected by using Social Studies Course Attitude Scale (Cronbach Alpha=0.61), Cooperative Learning Scale (α=0.80) and Social Studies Course Academic Achievement Scale (kr-20=0.78). The mean, standard deviation and Anova analyses were performed. As a result: Social Studies Education was reinforced by gamification contributes significantly more to students' attitudes towards social studies course than traditional method. However, it was determined that it did not contribute significantly to the benefit factor. Social studies education, which was reinforced by educational games, contributes significantly more to students' cooperative learning skills than the traditional method. Social studies education, which was reinforced by educational games, contributes significantly more to students' academic achievement towards social studies course than the traditional method.

Avdiu, E. (2019) Game-based learning practices in Austrian elementary schools. Educational Process: This study was conducted to contemporary literature studies show constant changes in the world of learning and teaching, and over the years game-based learning has been considered one of the most effective ways to learn something new. The purpose of this research was to understand the teaching practices used in game-based learning, and its importance in the elementary school teaching process. The study involved 24 teachers from six elementary schools in Austria. Semi-structured interviews were used. The research extended over a two-month period, including the researcher's observations and participation in classes. The results of this study are based on the descriptive analysis of teachers' views. According to the study's findings, but also from the researcher's observations, it is understood that game-based learning in Austrian elementary schools is a common teaching practice, which establishes the context of game-based learning that is fun and productive for children. Also, the results from this study illustrates the activities that teachers apply in different subjects, and show the different capacities and skills that children develop through games. According to teachers, game-based learning presents ongoing challenges related to finding and designing diverse game activities, and adapting their learning to the needs and interests of pupils.

Bado, N. (2019) Game-based learning pedagogy: A review of the literature. The present study sought to elicit insights into pedagogical practices pertaining to the integration of digital games into teaching and learning. A review of peer-reviewed journal articles published in English over the past 10 years uncovered common pedagogical themes that were categorized into a pre-game, game, and post-game taxonomy. The findings indicated that teachers implemented a variety of instructional activities at the pre-game, game, and post-game stages. Pre-game activities consisted mostly of lectures and gameplay trainings. At the game stage, teachers engaged in content scaffolding, performed classroom management activities, and provided technical assistance to students during gameplay. At the post-game stage, teachers organized debriefing sessions to ensure that gameplay translated into learning outcomes for students. Recommendations are made for the integration of games into teaching and learning in order to maximize student engagement and learning outcomes.

Brezovszky, B., McMullen, J., Veermans, K., Hannula-Sormunen, M. M., Rodríguez-Aflecht, G., Pongsakdi, N., & Lehtinen, E. (2019). Effects of a mathematics game-based learning environment on primary school students' adaptive number knowledge. This study was conducted to developing adaptive expertise with arithmetic problem solving is a much desired aim of primary school mathematics education. However, there are very few practical tools for teachers that would aid reaching this complex mathematical learning goal. The aim of the present study was to test the effects of a game-based learning environment in supporting primary school students' adaptive number knowledge and related arithmetic skills. Participants were 1168 students in grades four, five, and six. Classes were randomized in two conditions: in the experimental group regular mathematics teaching was enriched with gameplay using the Number Navigation Game (NNG), and in the control group students continued according to their regular math curriculum. An experimental design with pre- and post-test was used to measure students' adaptive number knowledge, arithmetic fluency, and pre-algebra knowledge. Overall, results showed that the experimental group outperformed the control group on adaptive number knowledge and math fluency. Results showed varying effects of the training in different grade levels, with more pronounced improvement of students' adaptive number knowledge in grade five. Game performance was related to the experimental group's post-test scores even after controlling for pre-test scores and grade. Results

suggest that the NNG is effective in enhancing different types of arithmetic skills and knowledge in different grades of primary school education and can provide teachers with a practical and flexible tool to extend their regular classroom practice.

Chen, M. H. M., Tsai, S. T., & Chang, C. C. (2019) Effects of game-based instruction on the results of primary school children taking a natural science course. This study was explored the effects of scenario simulation games and e-textbooks on the learning outcomes of elementary school students. The study subjects were 60 primary school students classified into two groups: The experimental group was provided with scenario simulation course materials, and the control group received e-textbook materials. The learning outcomes were compared between the two groups, which were further divided by ability level and gender. The female subjects in the experimental group showed slightly less improvement than the experimental group males, who showed significantly greater improvement than the female control group subjects. Use of the e-textbook had a less positive effect on learning outcomes than the scenario simulation game-based instruction.

Hussein, M. H., Ow, S. H., Cheong, L. S., Thong, M. K., & Ebrahim, N. A. (2019) Effects of digital game-based learning on elementary science learning. This study was determined to digital game-based learning (DGBL) has been perceived as an engaging teaching approach to foster students' learning and motivation. There are different opinions about the potential benefits of gaming on students' academic achievements, motivation, and skills in science courses due to the lack of empirical evidence and mixed results. To address this issue, the study provides a review of relevant literature from 2006 to 2017 to examine the effects of using educational computer games in teaching science at the elementary education level. It employed a multidimensional framework to classify learning outcomes from studies of DGBL applications in the area of elementary science education. The findings of this review show a promising potential of DGBL, particularly in the area of content understanding. However, the findings of the review also suggest that there is a need to provide additional research in order to gain a more comprehensive picture of the educational effectiveness of DGBL. Hence, researchers are advised to conduct more randomized controlled trials (RCTs), various learning modes (e.g., collaborative and individual), and comparisons of DGBL to traditional methods of teaching. Furthermore, the researchers are highly encouraged to examine the effectiveness of DGBL applications in other areas, such as

problem-solving and critical thinking. The findings of this review can benefit educational computer game designers, educators, and practitioners in the area of science education, particularly at the elementary level.

Marta Martín del Pozo, Verónica Basilotta Gómez-Pablos & Ana García-Valcárcel Muñoz-Repiso (2017) A quantitative approach to pre-service primary school teachers' attitudes towards collaborative learning with video games. This study was determined to increasing interest has been shown in using video games as an educational resource due to their pedagogical possibilities and their current expansion as an entertainment activity. However, their use in schools is still far from mainstream practice, which could be because of the barriers such as the price of video games, schools' technological infrastructures and teachers' attitudes. This study focuses on pre-service primary school teachers' attitudes (future primary school teachers currently studying at university) towards collaborative learning with video games, which employs video games in collaborative learning activities. Because playing video games is a common form of entertainment for higher education students, they investigate whether pre-service teachers' attitudes are influenced by their experience of playing video games (taking into account the number of years they have played video games), the frequency at which they play video games and their gender. This study takes a quantitative approach, using a questionnaire with a 5-point Likert attitude scale. The results indicate that pre-service primary teachers have a positive attitude towards collaborative learning with video games. Furthermore, students who have played video games for more years, who play more frequently and the male students have more positive attitudes to using video games in collaborative learning activities. Overall, pre-service teachers have positive attitudes towards collaborative learning with video games, which could affect the use of these resources in educational practices. As the main characters in the educational process, both teachers and children need to be comfortable with new practices to achieve the objective of the educational system, which is the complete formation of children.

Al-Azawi, R., Al-Faliti, F., & Al-Blushi, M. (2016) Educational gamification vs. Game based learning: Comparative study. The present study sought to elicit insights into pedagogical practices pertaining to the integration of digital games into teaching and learning. A review of peer-reviewed journal articles published in English over the past 10 years uncovered common pedagogical themes that were categorized into a

pre-game, game, and post-game taxonomy. The findings indicated that teachers implemented a variety of instructional activities at the pre-game, game, and post-game stages. Pre-game activities consisted mostly of lectures and gameplay trainings. At the game stage, teachers engaged in content scaffolding, performed classroom management activities, and provided technical assistance to students during gameplay. At the post-game stage, teachers organized debriefing sessions to ensure that gameplay translated into learning outcomes for students. Recommendations are made for the integration of games into teaching and learning in order to maximize student engagement and learning outcomes.

Shang et al. (2016) Game-based learning in Chinese classrooms: a case study. This study was determined to Game based learning is beginning to be used in classrooms in many countries, with research studies providing increasing empirical evidence to support the great potential of educational games in enhancing learning. International research has found that game-based learning develops creativity, enables collaborative learning and develops abilities to solve problems. Also, teachers become supporters for studying rather than directors and students are endowed with more freedom to gain and express knowledge. This study would use a case study of an innovative project in primary schools, mostly in rural Western China, entitled “Games into Classroom”, which has involved thousands of teachers. The project is a collaboration between China’s National Centre for Educational Technology (NCET), an independent body which is part of Ministry of Education, and UNICEF China. NCET has centres in every province and county in China and its mandate is to support educational technology and innovation in all Chinese schools. Currently, its work is guided by the national “2010-2020 Educational Informatization Plan”. NCET believes that as classrooms in China are being equipped with modern technology, and access to increasingly faster internet speeds, learning can become more effective and playful with the support of digital games and the project is being used to gather data to support this premise. The study will use the case study to explore game-based learning and how to successfully implement it. Thousands of primary school teachers from both rural and urban areas in China have received training on game-based learning, during which, under the instruction of making game-based classes, teachers come up with ideas of applying physical and digital games for class activity design; a series of sample lessons have been videoed to provide reference for a larger scale practice; students also develop interest and advance learning skills in game-based

learning process. In the Chinese Language classes in the case study, students are encouraged to make digital stories to present the knowledge about language and culture. Besides gaining experiences and knowledge, the "Games into Classroom" project also expects to improve students' practical ability to use modern technology, and prepare them for learning in 21st century. Visualization of abstract knowledge is also emphasized in Game-based learning. To illustrate the conception of this possibility in Mathematics, students are able to gain knowledge when they play with a box of small balls, which consist of half white and half black balls. In the future, NCET will try to introduce game-based learning to more schools and benefit more students in China. This study will not only present the findings on how to apply educational games into classrooms, but also make a discussion of the potential that digital video games can be used for teaching and learning in Chinese classrooms in the 21st century.

Creswell, Digras & Kokkalia (2015) Primary Teachers' and Students' Perception on the Use of ICT-Based Interactive Game in English Language Teaching. This study was investigated to (1) the teachers' perception on the use of ICT-based Interactive Game in teaching English, and (2) the perception of the sixth graders on the use of ICT-based Interactive Game toward their learning motivation and English achievement. Methodically, this study was quantitative research in which survey was employed. In order to collect the data, different questionnaires were administered primarily as the instrument both for teachers and students. The samples of this study were 6 English teachers and 152 students of the sixth grade in 6 primary schools in Sukasada District, Buleleng Regency. Prior to data analysis, the results of this study were computed by finding out the percentage of each item and its average in order to withdraw the conclusion descriptively. The results were (1) there was a positive perception of the teachers with regard to the use of ICT-based Interactive Game in teaching English to the sixth grade of primary schools in the cluster IV and V in Sukasada District and (2) there was positive perception of the students on the use of ICT-based Interactive Game toward their learning motivation and English achievement.

Marjoke Bakker, Marja van den Heuvel-Panhuizen, Alexander Robitzsch (2015) Effects of playing mathematics computer games on primary school students' multiplicative reasoning ability. This study used a large-scale cluster randomized

longitudinal experiment (N = 719; 35 schools) to investigate the effects of online mathematics mini-games on primary school students' multiplicative reasoning ability. The experiment included four conditions: playing at school, integrated in a lesson (E_{school}), playing at home without attention at school (E_{home}), playing at home with debriefing at school ($E_{home\text{-}school}$) and, in the control group, playing at school mini-games on other mathematics topics. The mini-games were played in Grade 2 and Grade 3 (32 mini-games in total). Using tests at the end of each grade, effects on three aspects of multiplicative reasoning ability were measured: *knowledge* of multiplicative number facts, *skills* in multiplicative operations, and *insight* in multiplicative number relations and properties of multiplicative operations. Through path analyses it was found that the mini-games were most effective in the $E_{home\text{-}school}$ condition, where both students' skills and their insight were positively affected as compared to the control group (significant ds ranging from 0.22 to 0.29). In the E_{school} condition, an effect was only found for insight in Grade 2 (d = 0.35), while in the E_{home} condition no significant effects were found. Students' gameplay behaviour (time and effort put in the games) was in some cases, but not always, related to their learning outcomes.

Hung, C. M., Huang, I., & Hwang, G. J. (2014) Effects of digital game-based learning on students' self-efficacy, motivation, anxiety, and achievements in learning mathematics. This study was explored to a mathematical game-based learning environment is developed on e-books for helping children reduce mathematical anxiety and improve their self-efficacy, motivation, and achievements in learning mathematics. To evaluate the effectiveness of the proposed approach, an experiment was conducted on an elementary school mathematics course. With quasi-experimental research, a total of 69 pupils in three classes were selected as the research subjects. One class was assigned to be experimental group A, another class was experimental group B, and the third was the control group. Each group consisted of 23 students. In the experimental process, the three groups took pre-tests, had experimental instruction, and then took post-tests. The experimental results show that the game-based e-book learning model effectively promoted the students' learning achievement, self-efficacy, and motivation of mathematics. However, no significant differences were found between the mathematical anxiety ratings of the three groups.

Sung, H. Y., & Hwang, G. J. (2013) A collaborative game-based learning approach to improving students' learning performance in science courses. This study was conducted to a collaborative game-based learning environment is developed by integrating a grid-based Mindtool to facilitate the students to share and organize what they have learned during the game-playing process. To evaluate the effectiveness of the proposed approach, an experiment has been conducted in an elementary school natural science course to examine the students' performance in terms of their learning attitudes, learning motivation, self-efficacy and learning achievements. From the experimental results, it is found that the Mindtool-integrated collaborative educational game not only benefits the students in promoting their learning attitudes and learning motivation, but also improves their learning achievement and self-efficacy owing to the provision of the knowledge organizing and sharing facility embedded in the collaborative gaming environment.

Mansureh Kebritchi, Atsusi Hirumi, Haiyan Bai (2010) The effects of modern mathematics computer games on mathematics achievement and class motivation. This study was examined the effects of a computer game on students' mathematics achievement and motivation, and the role of prior mathematics knowledge, computer skill, and English language skill on their achievement and motivation as they played the game. A total of 193 students and 10 teachers participated in this study. The teachers were randomly assigned to experimental and control groups. A mixed method of quantitative and interviews were used with Multivariate Analysis of Co-Variance to analyse the data. The results indicated significant improvement of the achievement of the experimental versus control group. No significant improvement was found in the motivation of the groups. Students who played the games in their classrooms and school labs reported greater motivation compared to the ones who played the games only in the school labs. Prior knowledge, computer and English language skill did not play significant roles in achievement and motivation of the experimental group.

Marina Papastergiou (2009) Digital Game-Based Learning in high school Computer Science education: Impact on educational effectiveness and student motivation. The aim of this study was to assess the learning effectiveness and motivational appeal of a computer game for learning computer memory concepts, which was designed according to the curricular objectives and the subject matter of the Greek high school

Computer Science (CS) curriculum, as compared to a similar application, encompassing identical learning objectives and content but lacking the gaming aspect. The study also investigated potential gender differences in the game's learning effectiveness and motivational appeal. The sample was 88 students, who were randomly assigned to two groups, one of which used the gaming application (Group A, $N = 47$) and the other one the non-gaming one (Group B, $N = 41$). A Computer Memory Knowledge Test (CMKT) was used as the pre-test and post-test. Students were also observed during the interventions. Furthermore, after the interventions, students' views on the application they were elicited through a feedback questionnaire. Data analyses showed that the gaming approach was both more effective in promoting students' knowledge of computer memory concepts and more motivational than the non-gaming approach. Despite boys' greater involvement and experience in computer gaming, and their greater initial computer memory knowledge, the learning gains that boys and girls achieved through the use of the game did not differ significantly, and the game was found to be equally motivational for boys and girls. The results suggest that within high school CS, educational computer games can be exploited as effective and motivational learning environments, regardless of students' gender.

National Studies

Wahidur Rahman, Yogesh, Md Tashhirul Islam & Farzil Kidwai (2024) Smart Quiz A Challenging and Engaging Learning Game. This study was conducted the use of mobile apps for game-based learning has become increasingly popular in recent years, with a growing body of research investigating their effectiveness in enhancing student learning outcomes. This paper presents a review of the literature on game-based learning apps, with a focus on their impact on student engagement, motivation, and academic achievement. The review included studies published between 2010 and 2020 and was conducted using a comprehensive search strategy. Results of the review suggest that game based learning apps can be effective in increasing student engagement, motivation, and academic achievement, particularly when they are well designed and integrated into the curriculum. However, the effectiveness of game-based learning apps may vary depending on the specific learning objectives and the target audience. Future research should continue to explore the potential of game based learning apps and identify best practices for their use in educational settings.

Indexed Terms- Game-based learning, Educational games, Computer games, Video games, Board games, Role-playing, games, Blended learning, Engagement, Deep learning, Problem-solving, Critical thinking, Collaboration, Motivation, Mathematics, Science, Language arts, Learning objectives, Learner population, Effectiveness, Best practices.

Banamita Sarma, Debarshi K. Brahma, Abhijit Padun & Anowar H. Mondal (2023) an Exploration on Interactive Educational Games for Teaching Primary School Students of Vernacular Medium. This study was determined the education system constantly evolving. Teaching has been around since ancient times from Guru–Shishya (apprentice) method to the popularity of books after the invention of the printing press to modern schools with e-learning, and now educational games with AR and VR. Educational games can play an important role on students to make them understand various subjects in a playful manner by coming out of conventional teaching–learning methods. This study explores the implications of educational games for vernacular medium school students and evaluates their improvements. An experiment was carried out in a few vernacular medium schools of Kokrajhar, Assam, where the majority of the students are from the Bodo community who face difficulty in understanding different languages except the Bodo language. A survey conducted among the students outlines the fact that they face such difficulty due to the unavailability of appropriate course contents and study materials in vernacular medium. Hence, to address the issue, an interactive educational game has been designed and developed in three languages—Bodo, English, and Assamese to help students understand their course subjects with fun. Further, the study explores the scope of aligning the educational game with the regular course curriculum of schools to make learning enjoyable and fun. The study further explores the possibility of conducting practical classes in digital mode as well as offering attractive rewards to engage students in their studies. A survey conducted among the students on the educational game gave a strong affirmative response to implement the experiment practically.

Sharma, A., Patel, R., & Kumar, S. (2023) Perceptions and Preferences for Game-Based Learning: A Survey of 701 Indian Participants. This study was founded the 701 Indian persons responded to a survey asking them about their game-playing habits and perceptions towards learning through games. The survey instrument was used to

gauge the participant demographics, awareness towards types of games, experience with various genres of games, playing habits, and perception towards the use of games for learning in schools. The study also grouped participants through their age groups and gender and tried to extract preferential patterns. Findings show that a majority of respondents were positive about the integration of games for the purpose of learning within the classroom. When presented with a hypothetical opportunity, STEM subjects overwhelmingly opted for learning through games, followed closely by history, geography, business studies, and programming. An analysis of keywords indicates that the participant's connotate games with words like 'challenge', 'competition, 'fun', and 'learning', indicating a primarily positive association. The findings also highlight disparities and similarities in preferential patterns when the responses were grouped according to their age and gender. The findings of the study provide support to the use of game-based applications in Indian education. It can motivate policymakers of pedagogy to experiment with the use of game-based learning applications in the classroom to utilise and optimise teaching-learning methodologies. Future research would include such studies that analyse the effectiveness of various game-based applications in the Indian classroom. It would potentially be comprised of experiment setups where the participants can experience educational games and then self-report on perceived learning and compare the experience with the traditional classroom teaching-learning methodologies.

Nandini Chatterjee Singh (2019) Game-Based Socio-Emotional Skills Assessment: A Comparison across Three Cultures. This study was found out the *Hall of Heroes*, a digital game, was used to compare social and emotional skills of 63 adolescent female students matched for age groups. Participants were assessed on six social and emotional competencies during game play, namely impulse control, cooperation, communication, social initiation, empathy, and emotional regulation and assigned to high, average, and low categories. Chi-square and odds ratio analyses revealed novel, significant correlations between various social and emotional skills for all cultures, suggesting similarities in socio-emotional development. In view of the increasing cross-cultural compositions of classrooms, these results may be beneficial to educators and school administrators.

Jana, Mrityunjoy & Arui, Subrata & Dutta, Papiya & Sar, Nityananda (2016) Teachers' Views on Game-based Learning (GBL) as a Teaching Method in

Elementary Level Education. This study was examined the emphasize on game-based learning (GBL) which can help students to improve problem-solving skills and make it possible for them to interpret their society, nature and the world around them through long term experiences. Actually, games provide information in a relevant situation or setting. So far it is very important for the social studies courses, in-class leisure activities, games, physical activities and extracurricular activities which aim to train students as active members of a classroom all over world. Using games in courses encourage reflection and comprehension of the learning. The purpose of this study is to understand elementary school teachers' views on GBL related to elementary school courses. 30 elementary school teachers from the schools located in districts with low, middle and high socio-economic levels in Paschim Medinipur participated in this qualitative study. The data has been collected by using semi-structured interviews and analyzed using descriptive analysis in the study area. The findings of the study, the elementary school teachers believe that content of the social studies course; in-class leisure activities, engaging child literature, games and physical activities were suitable for using GBL in the classroom. GBL activities were exemplified as e-learning activities, creative drama activities, digital games, values education and character education. Teachers experienced problems about time planning, students' non-cooperative behaviours, and teachers' insufficient background about organizing and designing games as well as economic problems and technical obstacles in related to GBL. This qualitative study could help the society by improving educational development.

Akshatha Nayak, Mamatha Shivananda Pai & Yashoda Satish (2015) Effectiveness of Game-Based Learning on Knowledge of Health Promotion among Primary School Children – A Quasi-experimental Study. This quasi-experimental study was conducted in rural Karnataka and involved 80 primary school children with a mean age of approximately 10 years. The aim was to assess the effectiveness of game-based learning on improving children's knowledge about health promotion. The intervention group was exposed to structured educational games, while the control group received traditional instruction. Post-intervention analysis revealed a statistically significant improvement in the experimental group's knowledge scores ($t = 13.77$, $p = 0.001$). The study concluded that interactive, game-based teaching strategies are more effective than conventional methods in enhancing learning and engagement among young learners.

K. Sivaranjani, M. Vidya & V. Smrithi Rekha (2015) Game-Based Learning Platform for Indian K–12 Mathematics. This study introduces a prototype game-based learning platform designed specifically for Indian K–12 mathematics education, focusing on students in Grades 6 to 8. The platform incorporates interactive math games, gesture-based interaction, virtual reality (VR), and 3D simulations to make abstract mathematical concepts more tangible and engaging. It supports regional languages, making it accessible to diverse learners across India. In addition to content delivery, the platform includes a learning analytics component that helps monitor and assess student performance in real time. The study highlights the potential of immersive, game-based environments to enhance understanding, retention, and participation in mathematics learning.

Pradeep Yammiyavar, Anmol Srivastava & Shobha Shashidhara (2014) Designing Tangible Interactive Learning Aids for a Pre-primary School Teaching Environment. This study was determined the Pre-primary school instruction and teaching methods in Indian schools are classified into two categories, as dictated by existing resources. While schools with more resources have adopted teaching aids that follow Bloom's Taxonomy, schools with fewer resources have been left behind in enhancing student' experience as well as raising teachers' satisfaction levels. All of this is reflected in the quality of students and teachers' output. Although numerous devices are available at the high school level and above, a survey revealed that few teaching aids are accessible for pre-primary schools in India. This study presents a way to incorporate simple and inexpensive technology to embed intelligence into objects, which in turn can be used in classrooms to enhance the learning experience. They adapted two tangible interactive objects and prototyped and tested them in three local schools. We show how these devices can constitute a sound educational pedagogy by demonstrating how they embody Howard Gardner's theory of multiple intelligences. The methodology discussed in this study presents possibilities for further work in the area of embedding intelligence into objects, leading towards cognitive development in children in a learning environment. They posit that designing such learning aids contributes to sustainability.

Chatterjee, Shiffon & Mohanty, Atasi & Bhattacharya, Bani (2011) Computer Game-Based Learning and Pedagogical Contexts. This study was reported the initial findings from an on-going study to explore the effects of various computer game-

based learning environments on learning outcomes. For this purpose, three educational computer games based on mathematics and social sciences were played by middle-school students under four pedagogical contexts: collaborative with active facilitation; collaborative without active facilitation; individualistic with active facilitation; and individualistic without active facilitation. The participants were 108 students from classes seven and eight, assigned to four groups each corresponding to one of the four learning conditions. Learning outcomes, as measured by post-game assessment tools specific to each of the three games were set as the dependent variable. The findings suggest that game-based learning is influenced by the pedagogical context within which the actual gameplay activity is situated. Specifically, peer collaboration and facilitator support were found to be effective in promoting learning through computer game-play.

Matthew Kam, Aishvarya Agarwal, Anuj Kumar, Siddhartha Lal, et al (2008) Designing E-Learning Games for Rural Children in India: A Format for Balancing Learning with Fun. This study was presented the development of a mobile game-based model aimed at enhancing English language learning among rural Indian children. The study introduces a structured instructional cycle "receptive–practice–activation" to balance fun with focused learning. Through iterative field trials involving three prototype games, the researchers tested user engagement and educational value. Findings revealed that a clear distinction between playful elements and learning content helped sustain student interest while preserving academic effectiveness. The study emphasizes how carefully designed educational games can be both engaging and pedagogically sound, especially in under-resourced settings.

Local Studies

Meena Duraiswamy & Lubna Ali Mohammed (2024) The Effects of Gamification Teaching Method in Enhancing Numeracy Learning among Primary School Students in Tamil Nadu **Background:** Attaining universal basic numeracy in primary schools by 2025 is emphasized in the Indian National Education Policy (NEP) 2020. By setting a deadline, all students in the primary school system have demonstrated a commitment to acquiring a fundamental level of numeracy skills. **Aim:** This study aims to determine the impact of gamification on enhancing numeracy learning in primary school students. **Method:** A quasi-experimental design was used to achieve

the aim of the study. The experimental group was taught by the gamified teaching method and the control group by the traditional method. Pretest and posttest were executed to collect data. A total of twelve weeks of time was taken to collect the data. **Sample**: A total of 30 children aged 6-7 years old from a private school in Tamil Nadu participated in this study, with fifteen students as the experimental group and fifteen students as the control group. **Results:** The results of the pretest and posttest values through the independent sample T-test show significant effects of gamification in enhancing numeracy learning and increasing motivation and engagement among primary school students in Tamil Nadu. **Conclusion:** The study shows that gamification has significant impacts on numeracy learning and increases motivation and engagement in students.

Malavika Ajith & G. Anburaj (2024) How to Improve Cognitive Learning through gamification in Education. This study was designed to investigate the Gamification in education involves game design elements to improve cognitive learning by engaging students in interactive and motivating by including key features such as adaptive difficulty levels, interactive simulations, team-based challenges, badges, and diverse engagement which allow students to participate and encourage problem-solving actively. This approach promotes knowledge-building, critical thinking, and creativity. Gamified learning enhances motivation through goals, challenges, and rewards, and a variety of activities keeps students engaged, allowing them to learn in a way that suits them. One of gamification's strengths is its adaptability to each student's abilities, offering personalized support for both slower and quicker learners. Ultimately, gamification makes learning more enjoyable and helps students gain a deeper understanding of subjects, building their confidence and motivation to keep learning and fostering long-term cognitive growth. Motivation, engagement, and self-efficacy are the main outcomes explored, as they contribute to a stronger grasp of concepts. This paper provides a framework for assessing the impact of gamification in educational settings.

Adarsh Pakide & G. Anburaj (2024) The Impact of Gamification in Education. This study was conducted the gamification in education is an area that is of greater interest as an innovative means through which students can get engaged within more effective motivation and learning outcomes. Therefore, gamification through the infusion of varied game mechanics that include points, badges, leader boards and challenges into

the area of education allows students to learn experiences that are highly interactive and immersive in nature. This abstract explains the core effects that gamification has on education and leads on towards higher motivation, knowledge retention and personalized learning effects on students. Developing critical thinking and problem-solving skills make obvious that gamification can meet the differences of various learning styles that usually happen during the learning process; besides this, it provides real-time feedback, promotes collaboration, and makes learning enjoyable. Of course, on top of this is the added problem of over-advertising competition or external rewards, which undoes the activity itself. However, gamification could become a super important tool for modern education, changing even the face of teaching as we have known it to suit the new needs of 21st-century learners.

Kalaiyarasi Shanmugam, B. Saravanan & S. N. Jeevarathinam (2023) Utilizing Gamification Techniques for English Language Instruction in Tamil Nadu's Engineering Institutions. This study investigated the efficacy of incorporating gamification methodologies to facilitate English language acquisition within the academic setting of engineering colleges in Tamil Nadu. The emphasis lies in addressing the language barriers faced by students pursuing technical education by integrating engaging and interactive game based approaches into the pedagogical framework. By employing various gamified strategies, such as language-oriented puzzles, simulations, and interactive digital platforms, this research aims to enhance language proficiency, communication skills, and overall engagement among engineering students. The study employs both qualitative and quantitative methodologies to assess the impact of gamification on English language learning outcomes. Additionally, the research analyzes the perceptions of students and educators regarding the effectiveness and acceptance of these innovative techniques. The findings are expected to provide valuable insights into the integration of gamification as a supplementary tool for improving English language proficiency in technical educational institutions.

M. Priyaadharshini & Monica Maiti (2023) Learning Analytics: Gamification in Flipped Classroom for Higher Education (Tamil Nadu context). This study was investigated the Flipped classroom is an innovative pedagogical model that has been adopted in various colleges across different disciplines. The Flipped classroom allows the students to actively participate and collaborate during in-class activities. The

measure of learner's performance, cognitive skills, and behaviour is essential in any teaching-learning process to assess and improvise the curriculum, syllabus, learning methodology, and educational technology. In this research work, various innovative teaching models suitable for Gen Z learners have been experimented with. These models included a virtual classroom, laboratory sessions, and flipped classrooms that were compared with the traditional classroom approach. A new model "CAM-S" is proposed to measure the Cognitive, Affective, and Motivational traits and identify slow learners. Learning analytics using the K-Means clustering algorithm is performed to analyze the behaviour and learning patterns of the learners in these pedagogical models. From the clusters obtained, the students were categorized into 3 different groups based on their performances. The result obtained after the analysis shows that Flipped Classroom has better learner performances when compared with the other pedagogical methodologies. Additionally, separate questionnaires are also created to obtain feedback from the students about their experiences with the 3 pedagogical techniques used. Even the behavioural models are analyzed using the gaming environment in the flipped classroom.

Research Gap

The game-based learning has gained increasing attention in recent years, several critical gaps continue to exist, especially in the context of primary education and teacher-driven game creation in India**.**

1. Limited research focused on primary teachers as game developers

Most existing studies examine the use of digital games by students**,** but very few investigate teachers' ability to design or use interactive games specifically for classroom transaction.

2. Lack of studies using simple, teacher-friendly platforms (e.g., Educandy)

Research widely discusses advanced gamification tools (Kahoot, Quizizz, Minecraft Education), but studies examining low-cost, no-coding apps such as Educandy are scarce**,** especially in the Indian primary sector.

3. Insufficient evidence on how interactive games support classroom transaction (not just assessment)

Many studies focus on academic achievement or motivation, but rarely on how games improve:

- Delivery of lessons
- Classroom interaction
- Student engagement
- Reinforcement activities
- Concept retention

Thus, the link between games and classroom pedagogy remains underexplored.

4. Very limited studies involving rural or government primary school teachers

Existing literature is heavily urban-centric. Research from Tamil Nadu and other Indian states involving government primary teachers and their technological readiness for game-based teaching is very limited.

5. Scarcity of training-based intervention studies

There is a lack of studies that:

- Train teachers to develop interactive games
- Measure pre- and post- competencies
- Analyse challenges in implementation

Thus, research rarely examines the effectiveness of teacher capacity-building programs in gamification.

6. Inadequate understanding of barriers faced by primary teachers

While general ICT challenges are documented, specific barriers in game-based teaching such as classroom time constraints, device availability, content alignment, and digital confidence—are not sufficiently researched.

7. Absence of localized, curriculum-aligned interactive games

There is almost no research on:

- Games designed for Tamil Nadu State Board primary curriculum

- Integration of regional language content
- Contextually relevant examples

Therefore, there is a need for studies producing localized and curriculum-based game content**.**

A review of existing literature indicates that previous studies have primarily focused on digital tools and applications for secondary school teachers and students, while very few have explored their use at the primary school level. Moreover, no specific studies have been conducted on the application of the Educandy app for primary school teachers, particularly in the context of Dharmapuri district. This gap highlights the need for targeted research that addresses the challenges faced by primary teachers in enhancing classroom engagement and student learning through digital interventions.

Need for the Study

Given the absence of prior research in this area, the present study has been undertaken to investigate the effectiveness of the Educandy app for primary school teachers. The study aims to evaluate its role in improving classroom teaching practices, facilitating student engagement and simplifying the delivery of difficult lesson concepts through interactive digital activities.

2.3 Summary of review of related literature

In this chapter, forty two reviews were presented which has given the clear picture about the present study. The reviews were collected from the areas of Studies on International Studies on Interactive Games (27) Indian Studies on Interactive Games (10) Local Studies on Interactive Games (05) through journals, periodicals, abstracts, District library, Sri Saradha College of Education library and Doctoral theses on interactive games besides various relevant books. Hence, the present research assumes greater prove the concept on improved Educandy App due to significance in this field.

The reviews showed that there is a significant positive effect of Educandy App. The researcher has found very less studies made on Educandy App.

III. METHODOLOGY

3.1. Introduction

In this chapter the need and significance of the study, objectives of the study, hypotheses of the study, selection of subjects, selection of variables, pilot study, test items, administration of the tool, one day orientation programme to the subjects, tester reliability, training programme, training schedule, collection of data, test administration and statistical analysis used have been presented.

3.2 Research Design

TABLE - 1

REPRESENTATION OF THE EXPERIMENTAL DESIGN

S. No	Type	Sources
1.	Nature of the Research	Experimental type (experimental group, pre-test and post – test Single group design)
2.	Variables	i) Dependent Variables – Educandy App ii) Independent Variables – Primary Teachers.
3.	Tools used	Educandy App Questionnaire (To find out the creation of Educandy app and activities).
4.	Sampling Method	Purposive Sampling Technique
5.	Size of the sample	40 Primary teachers from ten blocks.
6.	Sub Classification of Samples blocks	i) Dharmapuri - 04 ii) Nallampalli - 04 iii) Palacode - 04 iv) Pennagaram - 04 v) Eriyur - 04 vi) Karimangalam - 04 vii) Kadathur - 04 viii) Morappur - 04 ix) Harur - 04 x) Pappiredipatti - 04

7.	Schools	Primary and Upper Primary Schools-40
8.	Teachers	Primary Teachers-40
9.	Statistical Technique used	Different Statistical Techniques 1.Descriptive analysis 2.Inferential analysis 3. ANOVA

3.3 Sample-Sampling Method, Size and Distribution of the Sample

Sample-Sampling Method

Purposive sampling method was adopted for this study. The researcher purposely selected for primary teachers who demonstrated basic digital literacy and were willing to participate in the interactive games training. This method ensured that the sample included teachers most relevant and suitable for the objectives of the study.

Size and Distribution of the Sample

In this study, forty (40) primary teachers were randomly selected from Panchayat Union Primary and Panchayat Union Middle Schools situated in Dharmapuri District. A one-day training program on the Educandy App was provided to the participants, whose ages ranged between 35 and 50 years.

The population of the study consisted of teachers handling primary classes in Government Primary and Middle Schools in Dharmapuri District. From this population, the researcher selected 40 teachers as the sample using the purposive sampling method. The sample represented teachers from ten different blocks.

As shown in the above table-1 the nature of the study was Experimental type. The variables in the study were Educandy App. The tool used in the study were Questionnaire on Educandy App. 40 teachers from ten blocks were the sample of the study.

TABLE - 2

SAMPLE BASED ON BLOCK

S.NO	NAME OF THE BLOCK	STRENGTH	PERCENTAGE
1.	Dharmapuri	04	10%
2.	Nallampalli	04	10%
3.	Palacode	04	10%
4.	Pennagaram	04	10%
5.	Eriyur	04	10%
6.	Karimangalam	04	10%
7.	Kadathur	04	10%
8.	Morappur	04	10%
9.	Harur	04	10%
10.	Pappiredipatti	04	10%
Total			***100%***

Table 2 shows that 04 teachers from each of the blocks were taken as sample to analyze the present study.

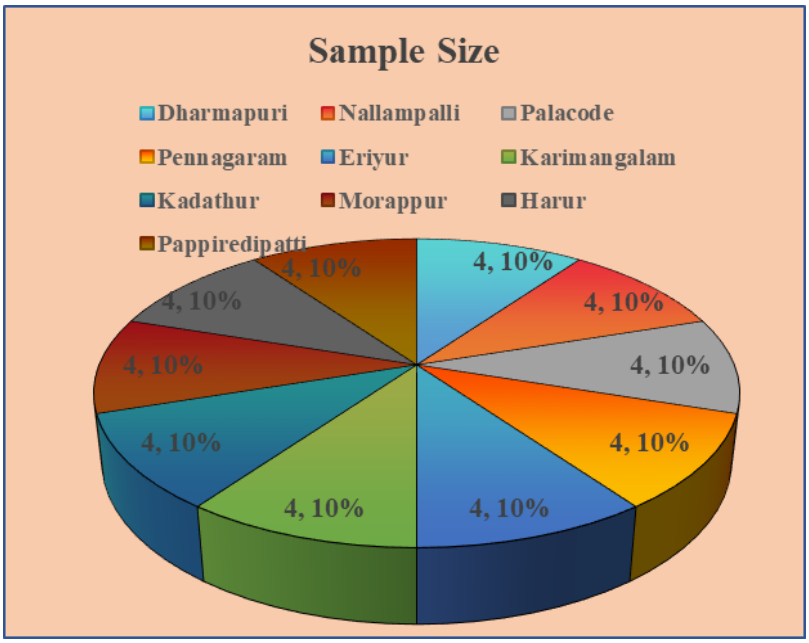

Figure: 1 Block wise teachers selected as Sample

TABLE - 3

PERCENTAGE OF SAMPLE BASED ON SCHOOL TYPE

S. No	Category	No of Schools	Percentage
1.	Upper Primary Schools	13	32.5%
2.	Primary Schools	27	67.5%
	Total	**40**	**100**%

Table 3 shows that 40 Primary schools their teachers were taken as sample to analyze the study.

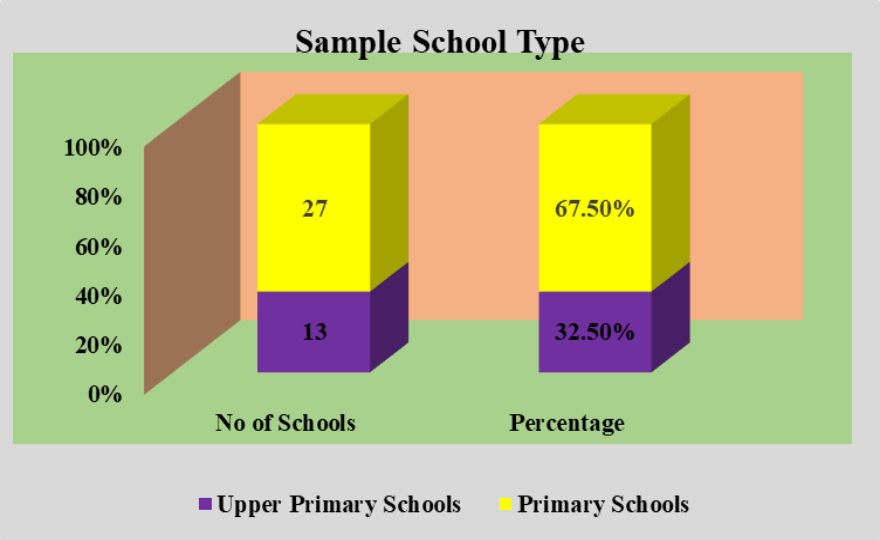

Figure: 2 School wise selection of teachers

3.4 Research Tools

The researcher prepared Educandy App Questionnaire to find out the creation of activities of teachers. As the standardized tool was not available to measure the Educandy App the researcher herself developed a tool for the same.

The preliminary questionnaire consisted of 50 items that focused on teacher enhancing the Educandy App. It was discussed with teachers, Headmasters and Educational Administrators who are involved in the field. Their suitable suggestions were also received and carried out.

Tool Validation

Tool validation workshop was conducted in Government Arts College, Dharmapuri. In this workshop an Expert committee member validated the tool and provided their needful suggestions for further construction of tool. For the development of the research instrument, the researcher initially prepared a pool of 50 questions based on the objectives of the study. These items were subjected to expert review in order to establish content validity and relevance. After a detailed evaluation, the expert committee refined and finalized 40 questions, ensuring clarity, appropriateness, and alignment with the research objectives. The standardized questionnaire was then considered suitable for administration to the participants.

3.5 Description of the Tools

The researcher also developed an Educandy App schedule to measure the teachers' creation of activities on academic performance. The preliminary questionnaire was developed with forty items. The research tool adopted a 2-point scale consisting of 'Yes' or 'No' responses. The domains and their corresponding number of items were as follows:

Easy Game Creation: This tool is designed to assess the teachers' prior knowledge of the Educandy app. The Educandy app enables teachers to create a variety of interactive classroom games.

Multiple Game Types: These questions allow teachers to design a range of interactive games and integrate them effectively into classroom teaching."

Concept Reinforcement: The Educandy app supports concept development in subjects like language, mathematics, science, and environmental science by allowing teachers to design interactive classroom activities.

Collaborative Learning: Educandy is an innovative educational app that helps teachers and students create engaging learning activities. Designed to make learning more interactive, Educandy allows users to generate quizzes, word games and other fun exercises effortlessly.

3.6 Scoring of Research Tools

After scoring 40 items, only answered items by the teachers were taken for the final test. The questionnaire was structured around four major domains identified as central to the objectives of the study. Each domain consisted of items designed to capture teachers' perceptions and experiences related to the Educandy App. The domains and their corresponding number of items were as follows:

- **Easy Game Creation** – 7 items
- **Multiple Game Types** – 6 items
- **Concept Reinforcement** – 6 items
- **Collaborative Learning** – 6 items

In total, the standardized questionnaire comprised **25 items** across these four domains, ensuring comprehensive coverage of the constructs under investigation.

Each item in the research tool was evaluated using a binary scoring method. A score of 1 was allotted for a 'Yes' response indicating the presence of the competency, whereas a score of 0 was given for a 'No' response. The total score reflected the overall competency level of the teacher.

3.7 Pilot Study

The researcher selected 40 items for Educandy App. After the discussion with schools required modifications were done in the organization of the items. The drafted questionnaire was given to a panel member consisting of guide, senior lecturer and lecturers and principle. From their suggestions, few items have been deleted and modifications have been carried out. Further few items were added after modifications done in questionnaire.

The tool was administered in the field as part of a pilot study to test its validity, reliability, and applicability. The tool was administered in the field through a pilot study to examine its clarity, feasibility, and reliability. Feedback obtained from the pilot participants was analyzed, and necessary modifications were made to refine the questionnaire before its final administration.

The questionnaire was administrated to representative samples of 55 primary teachers belonging to primary and upper primary schools in dharmapuri district. School and consent co-operation of the school head masters. Necessary instructions were given to the teachers as they should give their responses. The data gathered were scored and processed. A scoring key was prepared by the researcher and the scoring was done. Through this pilot study questions were excluded and it was made as standardized tool finally with the selected 25 statements by the researcher.

Administration of the Tool

The researcher administrated the questionnaire to the teachers of Primary and Middle schools in 10 blocks in dharmapuri district. Finally, the researcher got 40 filled questionnaires from the respondents.

3.8 Standardization of the tool-Validity, Reliability and Feasibility

Selection of the test Items

After scoring 40 items, only answered items by the teachers were taken for the final test. The items answered by the teachers were deleted from the tool. Thus, the final tool with 25 items were selected and administered to the sample.

Administration of the Tool

The researcher administrated the questionnaire to the teachers of Primary and Upper Primary schools in 10 blocks in Dharmapuri district. Finally, the researcher got 25 filled questionnaires from the respondents.

Tester Reliability

Prior to the commencement of the study, the researcher had undergone training in various techniques and testing procedures under expert's guidance.

Reliability of the Questionnaire

The reliability of the interactive games website Questionnaire for integration of Educandy App was established through pilot study.

Tool-Validity

The tool was validated through expert review. Subject experts in Educational Technology and Pedagogy examined the items for clarity, relevance, and content accuracy. Based on their suggestions, necessary modifications were incorporated. Thus, the tool possessed adequate content validity. Prior to the commencement of the study, the researcher had undergone training in various techniques and testing procedures under expert's guidance.

Reliability of the Questionnaire

The reliability of the instrument was established using the pilot study method. The checklist was administered to a small pilot group of primary teachers, and the scores obtained were compared. A high degree of consistency was observed, indicating that the instrument is reliable and stable over time. The reliability of the Educandy App Questionnaire was established through pilot study.

3.9 Research Process

Pre-Test

Pre-test was administered by the researcher to all forty primary school teachers from Primary and Upper Primary schools in dharmapuri district. Collected the pre-test questions and valuated the score. From the analysis of the pre-test tool the researcher found that most of the teachers want to know about how to organize orientation training programme for teachers in detail. During the moment of this pre-test, teachers doesn't have the knowledge about the Educandy App which seems to be useful for them to conduct the orientation training on their own. Realistically, it was highly notified the teachers were still remained backward about the Educandy App because of their lack of knowledge in using such Educandy App as well as teachers needfulness in accessing the skill by using the Educandy App for different mode visual creation for different contents more effectively towards their teachers has been noted highly at the time of Pre-test attempt towards them.

Module preparation

In module preparation work, researcher was involved and contributed highly to this Module Preparation. This module provides a step-by-step explanation of how teachers can create activities. By following the instructions, teachers can easily develop and use them in the classroom. The following topics were dealt in this word-based activities, matching exercises, quizzes, spelling and word formation etc., Educandy is an innovative educational app that helps teachers and students create engaging learning activities. Designed to make learning more interactive, Educandy allows users to generate quizzes, word games and other fun exercises effortlessly. Teachers can input their lesson content and the platform automatically transforms it into interactive games that students can play on computers, tablets or smartphones. Educandy App that lead to a one of the key features of its simplicity. Teachers do not need advanced technical skills to use the app. By simply entering words, questions or matching pairs, the app generates games such as anagrams, word searches and memory games. Educandy is especially useful for language learning, vocabulary building and subject revision. It supports various game formats allowing students to practice in a fun and stress-free environment. Additionally, it promotes independent learning by enabling students to access games anytime and anywhere. Another advantage of Educandy is its flexibility. Teachers can create customized activities that cater to different learning levels and subjects. Moreover, the app allows for collaboration as students can compete or work together in multiplayer modes. These activities make learning enjoyable and reinforce knowledge in an engaging way. It also assisted for the teachers' teaching and learning process in designing and evaluating their overall content related works.

TABLE - 4

Details of Research Training Module Uploaded Link

S. No	Website Address	Website Link
1.	indiravivi19@gmail.com	https://drive.google.com/file/d/1zoxcCK9OTMDpuvOWnTSCsNCh6WXJc9D2/view?usp=drive_link

One day Orientation training program

The researcher organized and conducted a one-day orientation training program for the teachers. During the session, detailed explanations regarding the processes and applications of the Educandy App were provided with appropriate reference to relevant content. The training was supported with PowerPoint presentations, live demonstrations, and model presentations to ensure clarity. A teacher's module was also provided as a reference material to guide further practice and application. The orientation emphasized not only familiarization with the app but also the creation and implementation of lesson-based activities. The Educandy App offers a variety of game formats, including Word Search, Spell It, Noughts and Crosses, Crosswords, Anagrams, Match Up, Multiple Choice, and Memory Game, which were demonstrated for the participants during the training.

Training Programme

One day Training Programme on Educandy App was conducted to the concern samples.

Selection of Variables

In this study, the researcher reviewed different relevant literature and consulted with experts Educandy App to identify most suitable variables. In the present study, the following dependent and independent variables were used.

Dependent Variables

Educandy App

Independent Variables

Orientation Training for Teachers (Classroom Transaction)

Training Schedule

The program has been formulated and designed on the basis of the explored recommendations of Primary teachers for Educandy App was given.

Strategies Implemented for the Teachers

The following Educandy App are given practice to the teachers they are Word Search, Spell it, Anagrams, Match-Up, Crosswords, Memory Game, Multiple Choice and Noughts & Crosses also be given practice to them. The participant interacted with the researcher and shared their doubts.

Post-Test

After the intervention activities, a post-test consisting of Educandy App–related questions was administered to the participants. The purpose of the post-test was to evaluate the effectiveness of the intervention by comparing the results with the pre-test scores.

3.10 Statistical Techniques

Descriptive Analysis

Descriptive analysis was employed to summarize the collected data by computing measures such as mean and standard deviation. This enabled the researcher to present a clear overview of the primary teachers' competencies and responses before and after the intervention.

Inferential Analysis

Inferential analysis was used to determine the significance of differences between the pre-test and post-test scores. Statistical tests were applied to generalize the findings from the sample to the wider population of primary teachers.

ANOVA

Analysis of Variance (ANOVA) was applied to examine whether there were significant differences in the competency levels of teachers across various demographic groups such as age, experience and qualification. This technique helped identify group-wise variations in the effectiveness of the interactive game-based training.

The subjects were selected randomly for the present study. Consisting of 40 primary teachers. Interactive Games training were given to the group. Educandy App Questionnaire for the evaluations were taken. The data collected from the subjects prior to experimental treatment as pre-test data and after training on selected criterion variables were statistically examined for significant difference, by applying the analysis of variance. No attempt was made to equate the subjects in any manner.

3.11 Conclusion

The methodology adopted for the present study was systematically designed to examine the development and implementation of interactive games using the Educandy app for classroom transactions among primary teachers. A descriptive research design was employed to understand teachers' perceptions, usage patterns, and challenges in integrating interactive games into their teaching practices. Using purposive sampling, the required sample of primary teachers was selected based on their accessibility and relevance to the study.

IV. ANALYSIS AND INTERPRETATION

4.1 Introduction

This chapter deals with the analysis of data which are collected through this study for the teachers. The teachers were analysed to identify the differences in Educandy App in relation to pre-test and post-test. Both pre-test and post-test mean scores differences were taken into account and significant differences were found through ‘t’ test analysis at 0.01 level of confidence.

4.2 Analysis and Interpretation

This is a crucial portion of the project in arriving at the conclusion by examining the hypotheses. The procedure or testing of hypotheses was conducted by either accepting or rejecting the research hypotheses, based on the results obtained at a 0.01 level of confidence, which was deemed sufficient for the study. The test was usually called the test of significance. If the obtained value was greater than the table value alternate hypothesis was accepted. If the obtained value was less than the table value, the alternate hypothesis was rejected.

TABLE -5

SIGNIFICANT DIFFERENCE OF TEACHERS EDUCANDY APP SCORES BETWEEN PRE-TEST AND POST-TEST

CATEGORY	NO	MEAN	SD	't' VALUE	REMARKS
Pre-Test	40	31.7	6.54	9.02*	SD*
Post-Test	40	85.9	28.27		

***SD- Significant Difference**

't' ratio at 0.01 level of confidence for the degree of freedom (df) at 78=2.639

Discussions on Educandy App

The collected data from pre - test and post - test on Educandy app levels of the teachers have been statistically analysed by using 't' test and the results are presented in the Table-5.

Table - 5 shows that mean scores of pre-test in teachers was 31.7% and standard deviation score 6.54% respectively.

Table - 5 shows that post-test mean scores of teachers was 85.9% and its post-test standard deviation was 28.27% respectively.

The mean differences between the pre-test and the post-test were 54.2% respectively.

The obtained‘t’ value 9.02 in teachers with respect to the Educandy app level was significantly higher than the required ‘t’ value (2.639) and it was proved there is a significant difference in the Educandy app level of the teachers. So, Hypotheses of the present study is rejected.

The obtained mean values in pre-test and post-test values of teachers are represented through bar diagram for better understanding of the results.

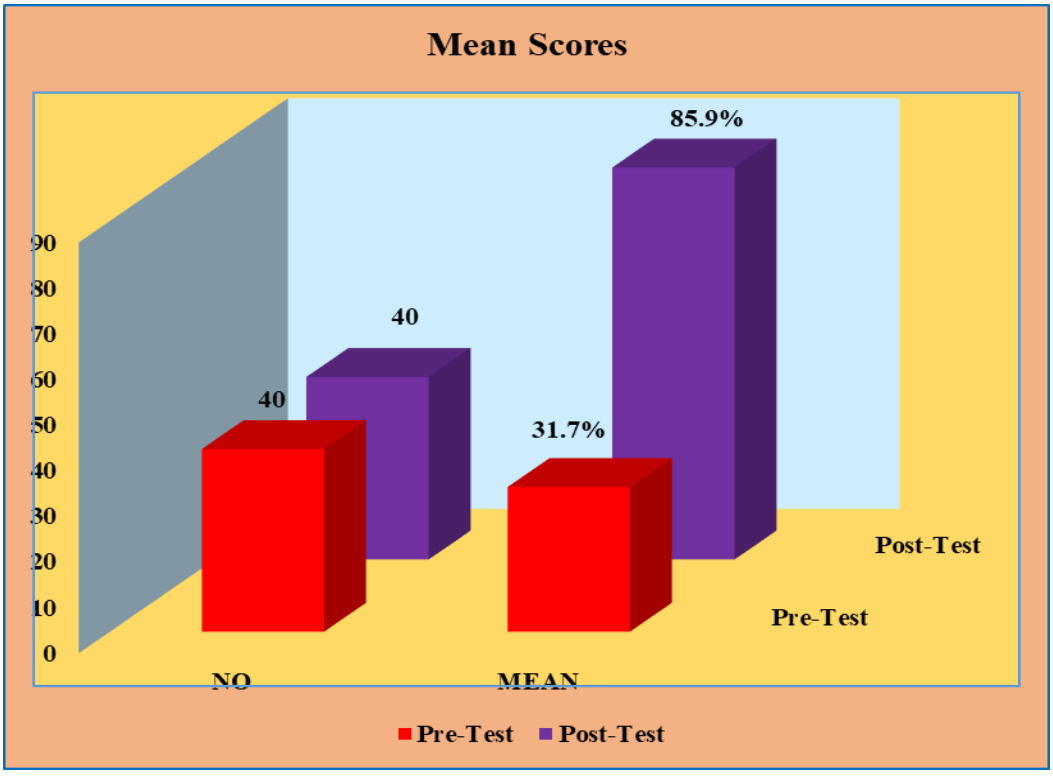

Figure: 3 Mean scores of teachers pre-test and post-test

TABLE – 6

SIGNIFICANT DIFFERENCE OF TEACHERS EDUCANDY APP SCORES BETWEEN DOMAIN - 1 PRE-TEST AND POST-TEST

CATEGORY	NO	MEAN	SD	't' VALUE	REMARKS
Pre-Test	40	33.0	12.0	8.40*	*SD
Post-Test	40	91.0	28.38		

***SD- Significant Difference**

't' ratio at 0.01 level of confidence for the degree of freedom (df) at 78=2.636

Discussions on Educandy App

The collected data from domain-1 pre - test and post - test on Educandy app levels of the male teachers have been statistically analyzed by using 't' test and the results are presented in the Table-6.

Table - 6 shows that mean scores of pre-test in domain-1 was 33.0% and standard deviation score 12.0% respectively.

Table - 6 shows that post-test mean scores of domain-1 was 91.0% and its post-test standard deviation was 28.38% respectively.

The mean differences between the pre-test and the post-test were 58.0% respectively.

The obtained ‘t’ value 8.40 in male teachers with respect to the Educandy app level was significantly higher than the required ‘t’ value (2.636) and it was proved there is a significant difference in the Educandy app level of the male teachers. So, Hypotheses of present study is rejected.

The obtained mean values in domain-1 pre-test and post-test values are represented through bar diagram for better understanding of the results.

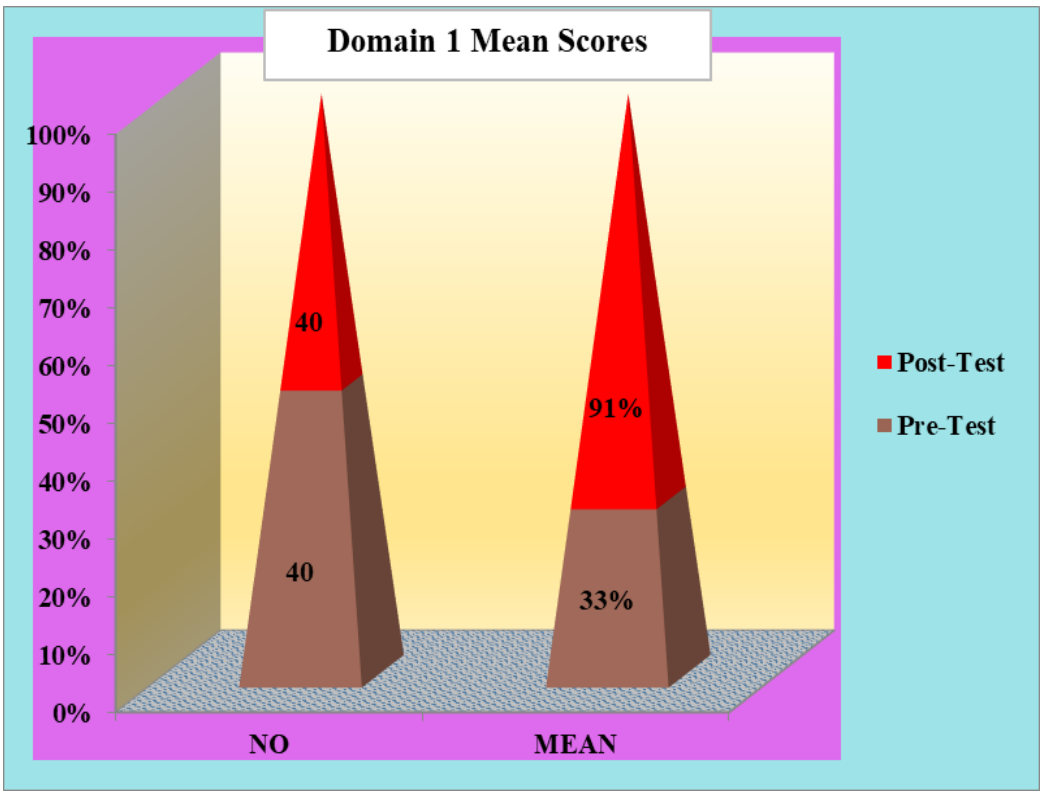

Figure: 4 Mean scores of domain 1 in teachers pre-test and post-test

TABLE – 7

SIGNIFICANT DIFFERENCE OF TEACHERS EDUCANDY APP SCORES BETWEEN DOMAIN - 2 PRE-TEST AND POST-TEST

CATEGORY	NO	MEAN	SD	't' VALUE	REMARKS
Pre-Test	40	30.08	14.7	4.39*	*SD
Post-Test	40	89.0	32.14		

***SD- Significant Difference**

't' ratio at 0.01 level of confidence for the degree of freedom (df) at 78=2.636

Discussions on Educandy App

The collected data from domain-2 pre - test and post - test on Educandy app levels of the male teachers have been statistically analyzed by using 't' test and the results are presented in the Table-7.

Table - 7 shows that mean scores of pre-test in domain-2 was 30.08% and standard deviation score 14.7% respectively.

Table - 7 shows that post-test mean scores of domain-2 was 89.0% and its post-test standard deviation was 32.0% respectively.

The mean differences between the pre-test and the post-test were 58.2% respectively.

The obtained ‘t’ value 4.39 in male teachers with respect to the Educandy app level was significantly higher than the required ‘t’ value (2.636) and it was proved there is a significant difference in the Educandy app level of the male teachers. So, Hypotheses of present study is rejected.

The obtained mean values in domain-2 pre-test and post-test values are represented through bar diagram for better understanding of the results.

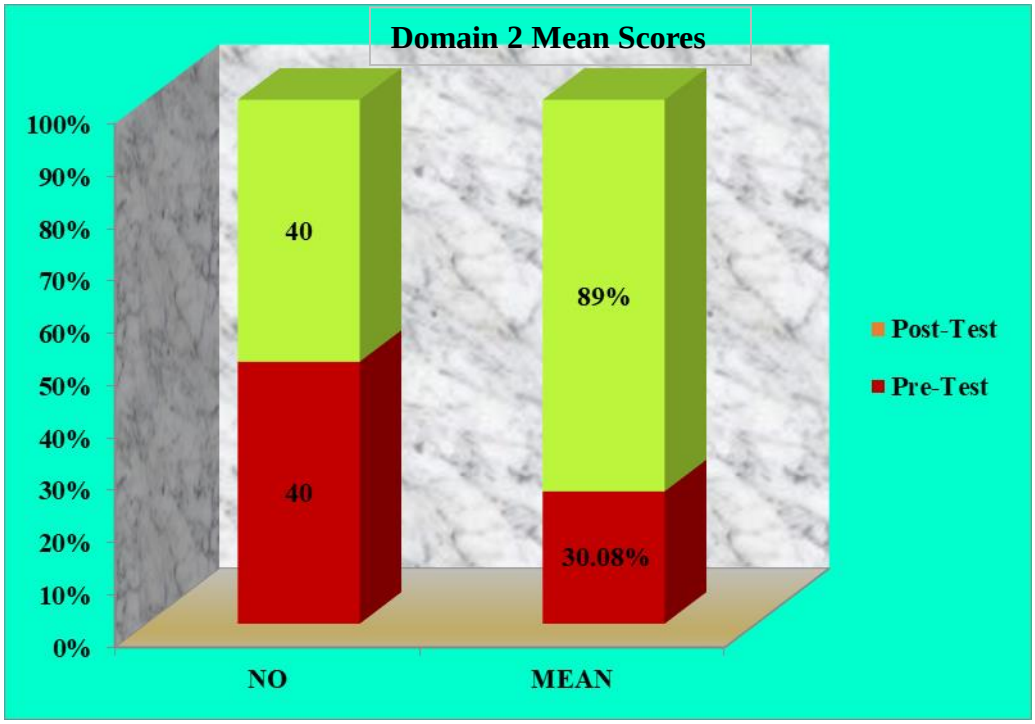

Figure: 5 Mean scores of Domain 2 in teachers pre-test and post-test

TABLE – 8

SIGNIFICANT DIFFERENCE OF TEACHERS EDUCANDY APP SCORES BETWEEN DOMAIN - 3 PRE-TEST AND POST-TEST

CATEGORY	NO	MEAN	SD	't' VALUE	REMARKS
Pre-Test	40	33.0	16.0	3.5*	*SD
Post-Test	40	88.15	31.13		

***SD- Significant Difference**

't' ratio at 0.01 level of confidence for the degree of freedom (df) at 78=2.636

Discussions on Educandy App

The collected data from domain-3 pre - test and post - test on Educandy app levels of the male teachers have been statistically analyzed by using 't' test and the results are presented in the Table-8.

Table - 8 shows that mean scores of pre-test in domain-3 was 33.0% and standard deviation score 16.0% respectively.

Table - 8 shows that post-test mean scores of domain-3 was 88.15% and its post-test standard deviation was 31.13% respectively.

The mean differences between the pre-test and the post-test were 54.85% respectively.

The obtained ‘t’ value 3.5 in male teachers with respect to the Educandy app level was significantly higher than the required ‘t’ value (2.636) and it was proved there is a significant difference in the Educandy app level of the male teachers. So, Hypotheses of present study is rejected.

The obtained mean values in domain-3 pre-test and post-test values are represented through bar diagram for better understanding of the results.

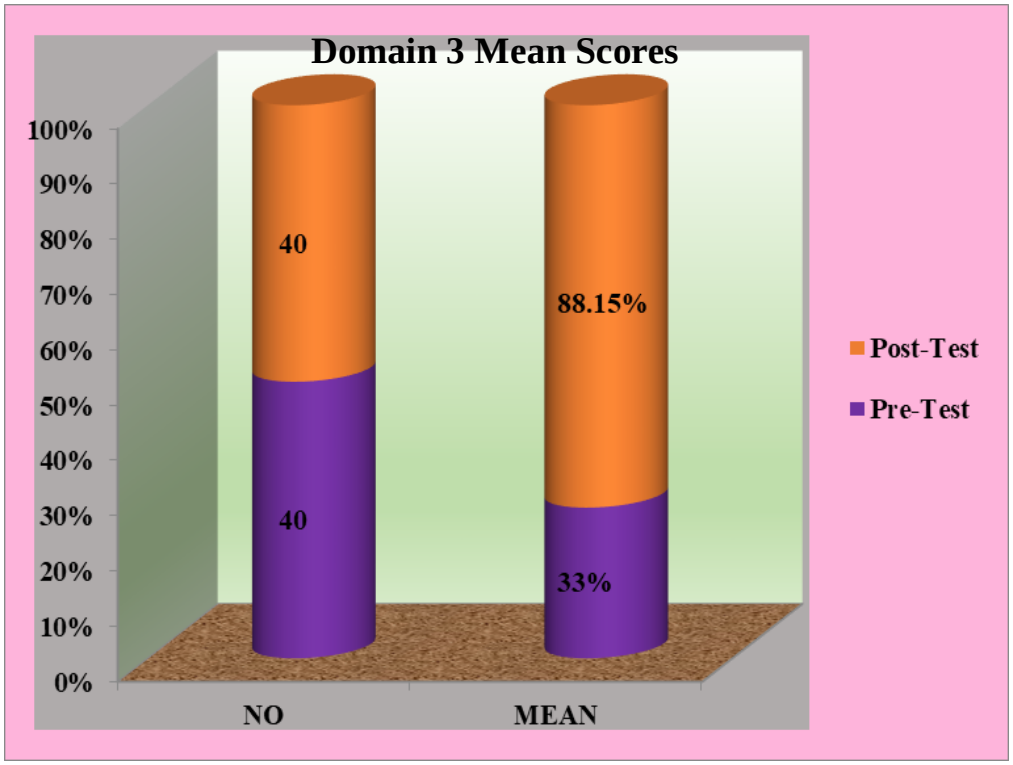

Figure: 6 Mean scores of Domain 3 in teachers pre-test and post-test

TABLE – 9

SIGNIFICANT DIFFERENCE OF TEACHERS EDUCANDY APP SCORES BETWEEN DOMAIN - 4 PRE-TEST AND POST-TEST

CATEGORY	NO	MEAN	SD	't' VALUE	REMARKS
Pre-Test	40	31.0	16.4	4.7*	*SD
Post-Test	40	87.0	31.6		

***SD- Significant Difference**

't' ratio at 0.01 level of confidence for the degree of freedom (df) at 78=2.636

Discussions on Educandy App

The collected data from domain-4 pre - test and post - test on Educandy app levels of the male teachers have been statistically analyzed by using 't' test and the results are presented in the Table-9.

Table - 9 shows that mean scores of pre-test in domain-4 was 31.0% and standard deviation score 16.4% respectively.

Table - 9 shows that post-test mean scores of domain-4 was 87.0% and its post-test standard deviation was 31.6% respectively.

The mean differences between the pre-test and the post-test were 56.0% respectively.

The obtained ‘t’ value 4.7 in domain-4 teachers with respect to the Educandy app level was significantly higher than the required ‘t’ value (2.636) and it was proved there is a significant difference in the Educandy app level of the male teachers. So, Hypotheses of present study is rejected.

The obtained mean values in domain-4 pre-test and post-test values are represented through bar diagram for better understanding of the results.

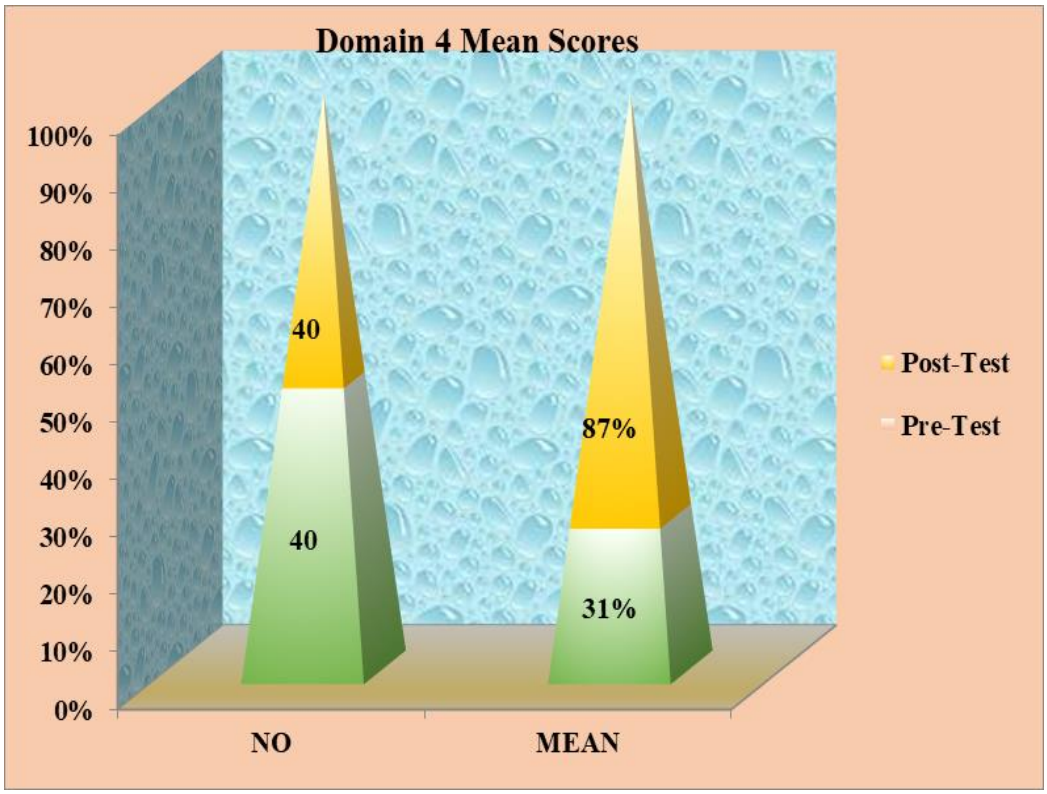

Figure: 7 Mean scores of Domain 4 in teachers pre-test and post-test

TABLE – 10

COMPARATIVE INTERPRETATION OF TEACHERS EDUCANDY APP SCORES OF DOMAINS

Category	Mean Difference	F-value	p-value	r-value
Domain 1	58.0	350.72	8.679972e-31	0.659
Domain 2	58.25	355.55	8.784974e-31	0.693
Domain 3	54.85	287.48	7.000128e-28	0.648
Domain 4	56.0	284.74	9.394535e-28	0.718

Comparative Interpretation of Domains

1. Overall Gains

All four domains showed substantial improvement from pre-test to post-test.

The **largest gain** was in **Domain 2 (Mean Difference = 58.25)**, suggesting that the intervention had the strongest effect in this area.

Domain 3 had the smallest gain (54.85), but still showed a highly significant improvement.

1. Correlation Patterns

The **strongest correlation** between pre- and post-test scores was found in **Domain 4 (r = 0.718)**, indicating that initial performance in this domain was a strong predictor of final outcomes.

The **weakest correlation** was observed in **Domain 3 (r = 0.648)**, suggesting that post-test improvements were less dependent on initial pre-test performance in this area, which may indicate greater equalizing benefits of the intervention.

3. Statistical Significance

All domains reported **highly significant F-values (p < 0.001)**, ranging from 284.74 (Domain 4) to 355.55 (Domain 2).

This confirms that the differences between pre-test and post-test scores are statistically meaningful and not due to chance.

4. Relative Domain Effectiveness

Domain 2 stands out with the **largest average improvement**.

Domain 4 showed the **strongest predictive relationship** (highest r-value), meaning learners' prior knowledge aligned more closely with their post-intervention performance.

Domain 2 had the highest F-value, suggesting the most robust statistical effect of the intervention despite a slightly smaller gain compared to other domains.

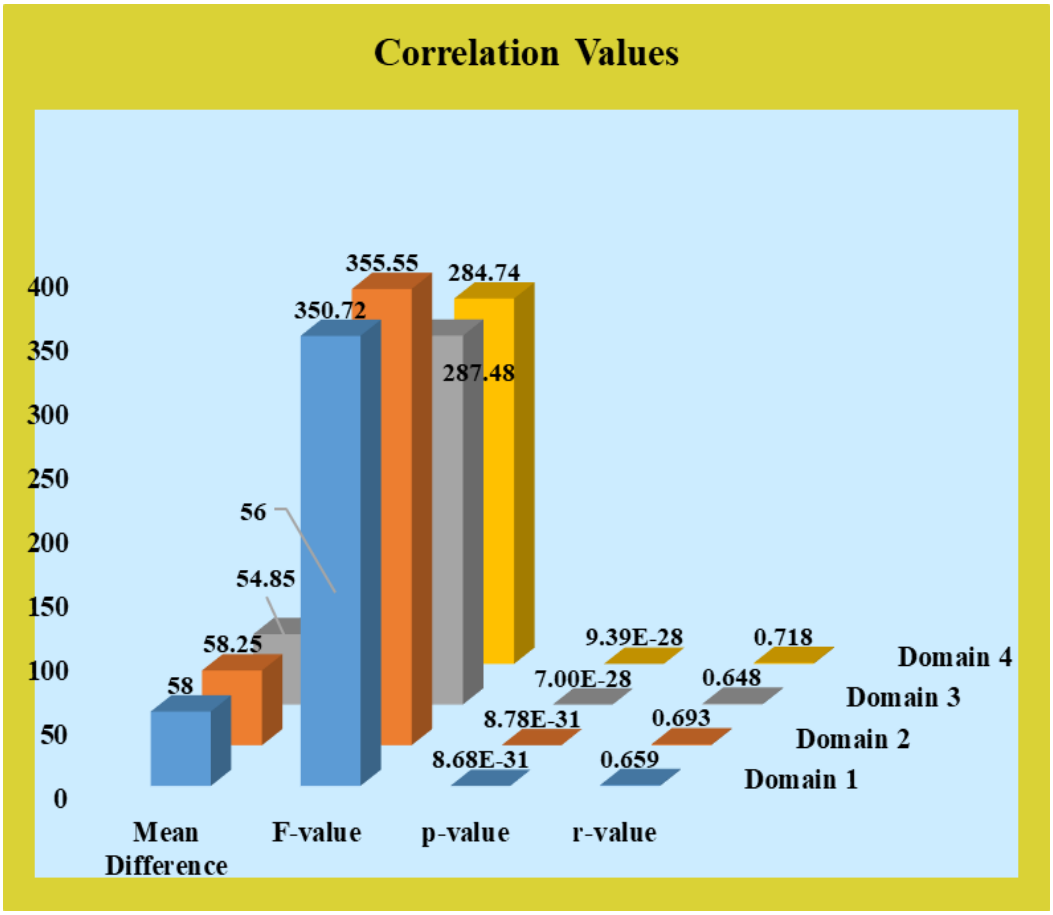

Figure: 8 Correlation values of Domain in teachers

TABLE – 11

SIGNIFICANT DIFFERENCE OF EDUCANDY APP SCORES BETWEEN DHARMAPURI EDUCATION DISTRICT TEACHERS PRE-TEST AND POST-TEST

CATEGORY	NO	MEAN	SD	't' VALUE	REMARKS
Pre-Test	20	30.2	8.16	5.71*	*SD
Post-Test	20	86.6	29.87		

***SD- Significant Difference**

't' ratio at 0.01 level of confidence for the degree of freedom (df) at 38=2.704

Discussions on Educandy App

The collected data from dharmapuri education district teachers pre - test and post - test on Educandy app levels have been statistically analyzed by using 't' test and the results are presented in the Table-11.

Table - 11 shows that mean scores of pre-test in dharmapuri education district teachers was 30.2% and standard deviation score was 8.16% respectively.

Table - 11 shows that post-test mean scores of dharmapuri education district teachers was 86.6% and its post-test standard deviation score was 29.87% respectively.

The mean differences between the pre-test and the post-test were 56.4% respectively.

The obtained ‘t’ value 5.71 in dharmapuri education district teachers with respect to the Educandy app level was significantly higher than the required ‘t’ value (2.704) and it was proved there is a significant difference in the Educandy app level of the teachers. So, Hypotheses of present study is rejected.

The obtained mean values in dharmapuri education district teachers pre-test and post-test values are represented through bar diagram for better understanding of the results.

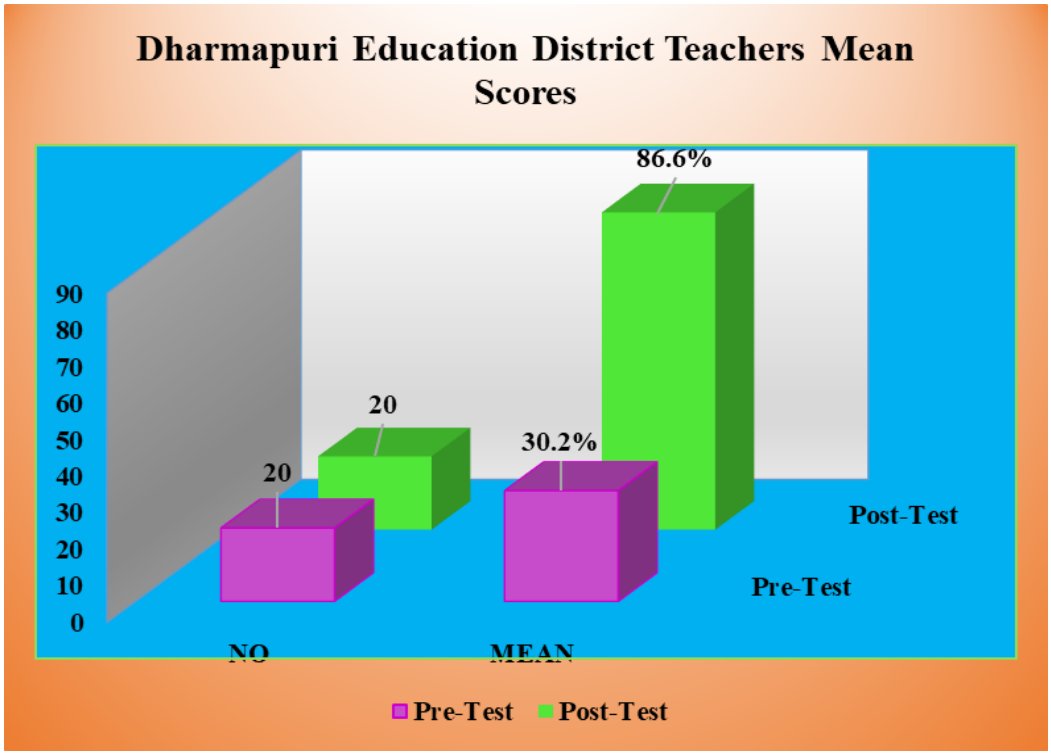

Figure: 9 Mean scores of Dharmapuri Education district teachers pre-test and post-test

TABLE – 12

SIGNIFICANT DIFFERENCE OF EDUCANDY APP SCORES BETWEEN HARUR EDUCATION DISTRICT TEACHERS PRE-TEST AND POST-TEST

CATEGORY	NO	MEAN	SD	't' VALUE	REMARKS
Pre-Test	20	33.2	4.95	2.83*	*SD
Post-Test	20	89.2	29.34		

***SD- Significant Difference**

't' ratio at 0.01 level of confidence for the degree of freedom (df) at 38=2.704

Discussions on Educandy App

The collected data from harur education district teachers pre - test and post - test on Educandy app levels have been statistically analyzed by using 't' test and the results are presented in the Table-12.

Table - 12 shows that mean scores of pre-test in harur education district teachers was 33.2% and standard deviation score was 4.95% respectively.

Table - 12 shows that post-test mean scores of harur education district teachers was 89.2% and its post-test standard deviation score was 29.34% respectively.

The mean differences between the pre-test and the post-test were 56.0% respectively.

The obtained ‘t’ value 2.83 in harur education district teachers with respect to the Educandy app level was significantly higher than the required ‘t’ value (2.704) and it was proved there is a significant difference in the Educandy app level of the teachers. So, Hypotheses of present study is rejected.

The obtained mean values in harur education district teachers pre-test and post-test values are represented through bar diagram for better understanding of the results.

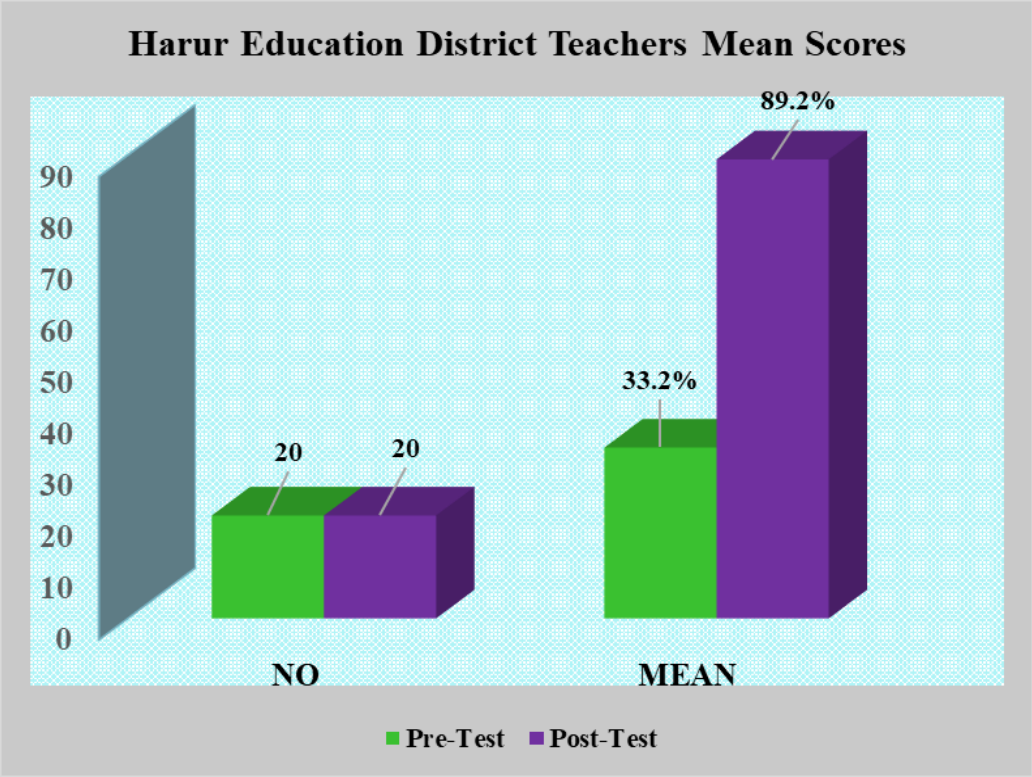

Figure: 10 Mean scores of Harur Education district teachers pre-test and post-test

TABLE – 13

SIGNIFICANT DIFFERENCE OF EDUCANDY APP SCORES BETWEEN DHARMAPURI EDUCATION DISTRICT TEACHERS AND HARUR EDUCATION DISTRICT TEACHERS PRE-TEST

CATEGORY	NO	MEAN	SD	't' VALUE	REMARKS
Dharmapuri Education District Teachers Pre-Test	20	30.2	8.16	0.07*	*NSD
Harur Education District Teachers Pre-Test	20	33.2	4.95		

***NSD- No Significant Difference**

't' ratio at 0.01 level of confidence for the degree of freedom (df) at 38=2.704

Discussions on Educandy App

The collected data from Dharmapuri Education District Teachers and Harur Education District Teachers pre-test on Educandy app levels of the male teachers have been statistically analyzed by using 't' test and the results are presented in the Table-13.

Table - 13 shows that mean scores of Dharmapuri Education District Teachers pre-test was 30.2% and standard deviation score was 8.16% respectively.

Table - 13 shows that mean scores of Harur Education District Teachers pre-test was 33.2% and standard deviation score was 4.95% respectively.

The mean differences between the Dharmapuri Education District Teachers and Harur Education District Teachers pre-test were 3.0% respectively.

The obtained ‘t’ value 0.07 Dharmapuri Education District Teachers and Harur Education District Teachers with respect to the Educandy app level was significantly lower than the required ‘t’ value (2.704) and it was proved there is no significant difference in the Educandy app level of the teachers. So, Hypotheses of present study is accepted.

The obtained mean values in Dharmapuri Education District Teachers and Harur Education District Teachers pre-test values are represented through bar diagram for better understanding of the results.

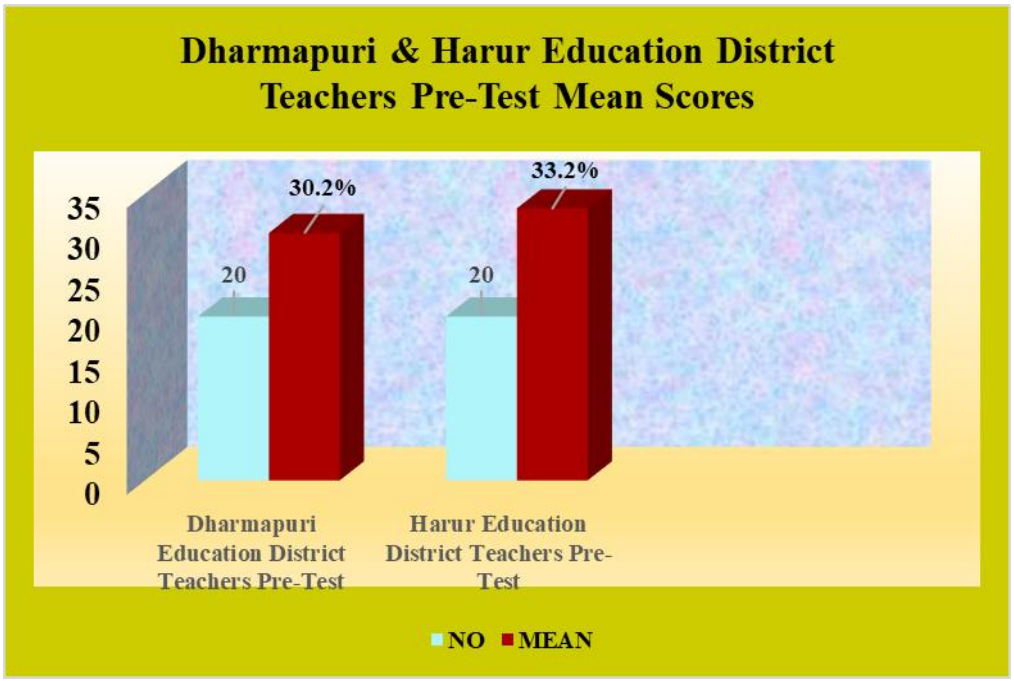

Figure: 11 Mean scores of Dharmapuri & Harur education District teachers pre-test

TABLE – 14

SIGNIFICANT DIFFERENCE OF EDUCANDY APP SCORES BETWEEN DHARMAPURI EDUCATION DISTRICT TEACHERS AND HARUR DISTRICT TEACHERS POST-TEST

CATEGORY	NO	MEAN	SD	't' VALUE	REMARKS
Dharmapuri Education District Teachers Post-Test	20	86.6	29.25	0.18*	*NSD
Harur Education District Teachers Post-Test	20	89.2	28.34		

***NSD- No Significant Difference**

't' ratio at 0.01 level of confidence for the degree of freedom (df) at 38=2.704

Discussions on Educandy App

The collected data from Dharmapuri Education District Teachers and Harur Education District Teachers post-test on Educandy app levels of the male teachers have been statistically analyzed by using 't' test and the results are presented in the Table- 14.

Table - 14 shows that mean scores of Dharmapuri Education District Teachers post-test was 84.6% and standard deviation score was 29.25% respectively.

Table - 14 shows that mean scores of Harur Education District Teachers post-test was 87.2% and standard deviation score was 28.34% respectively.

The mean differences between the Dharmapuri Education District Teachers and Harur Education District Teachers post-test were 3.4% respectively.

The obtained ‘t’ value 0.18 in male teachers with respect to the Educandy app level was significantly lower than the required ‘t’ value (2.704) and it was proved there is no significant difference in the Educandy app level of the male teachers. So, Hypotheses of present study is accepted.

The obtained mean values in Dharmapuri Education District Teachers and Harur Education District Teachers post-test values are represented through bar diagram for better understanding of the results.

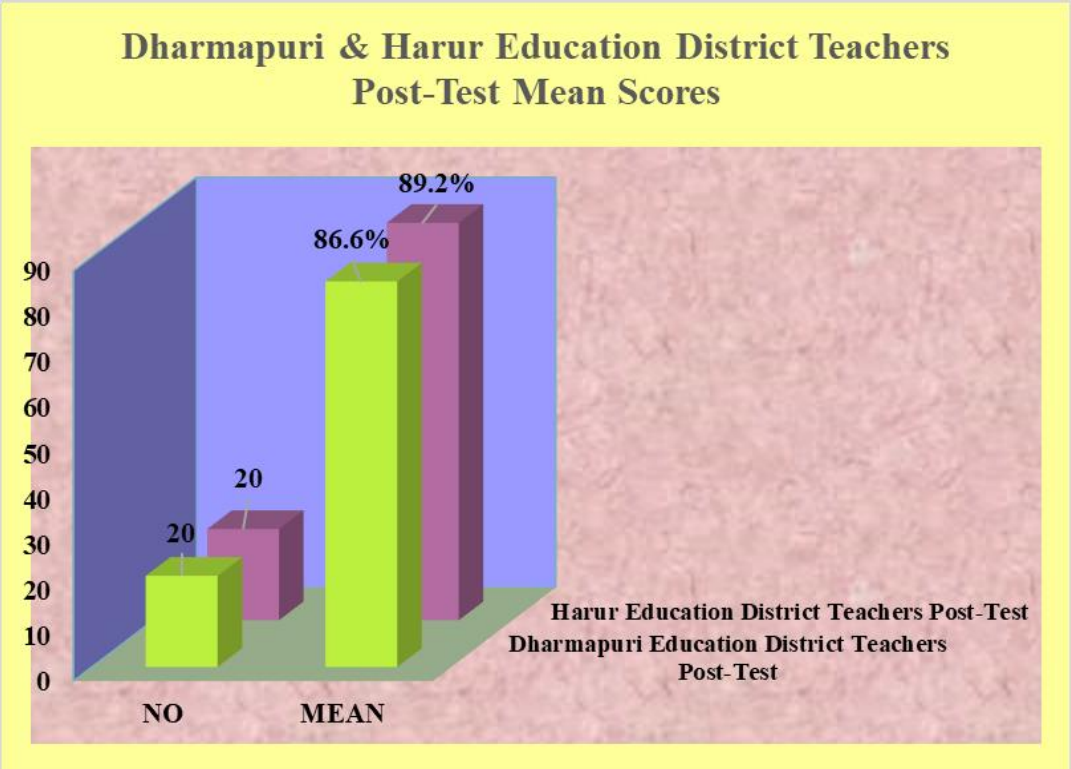

Figure: 12 Mean scores of dharmapuri education district teachers post-test

TABLE – 15

SIGNIFICANT DIFFERENCE OF TEACHERS EDUCANDY APP SCORES BETWEEN MALE PRE-TEST AND POST-TEST

CATEGORY	NO	MEAN	SD	't' VALUE	REMARKS
Pre-Test	26	29.17	7.25	4.49*	*SD
Post-Test	26	88.31	29.89		

***SD- Significant Difference**

't' ratio at 0.01 level of confidence for the degree of freedom (df) at 50=2.660

Discussions on Educandy App

The collected data from male pre - test and post - test on educandy app levels of the male teachers have been statistically analyzed by using 't' test and the results are presented in the Table- 15.

Table - 15 shows that mean scores of pre-test in male teachers was 29.17% and standard deviation score was 7.25% respectively.

Table - 15 shows that post-test mean scores of male teachers was 88.31% and its post-test standard deviation was 29.89% respectively.

The mean differences between the pre-test and the post-test were 59.14% respectively.

The obtained ‘t’ value 4.49 in male teachers with respect to the educandy app level was significantly higher than the required ‘t’ value (2.660) and it was proved there is a significant difference in the educandy app level of the male teachers. So, Hypotheses of present study is rejected.

The obtained mean values in male teachers pre-test and post-test values are represented through bar diagram for better understanding of the results.

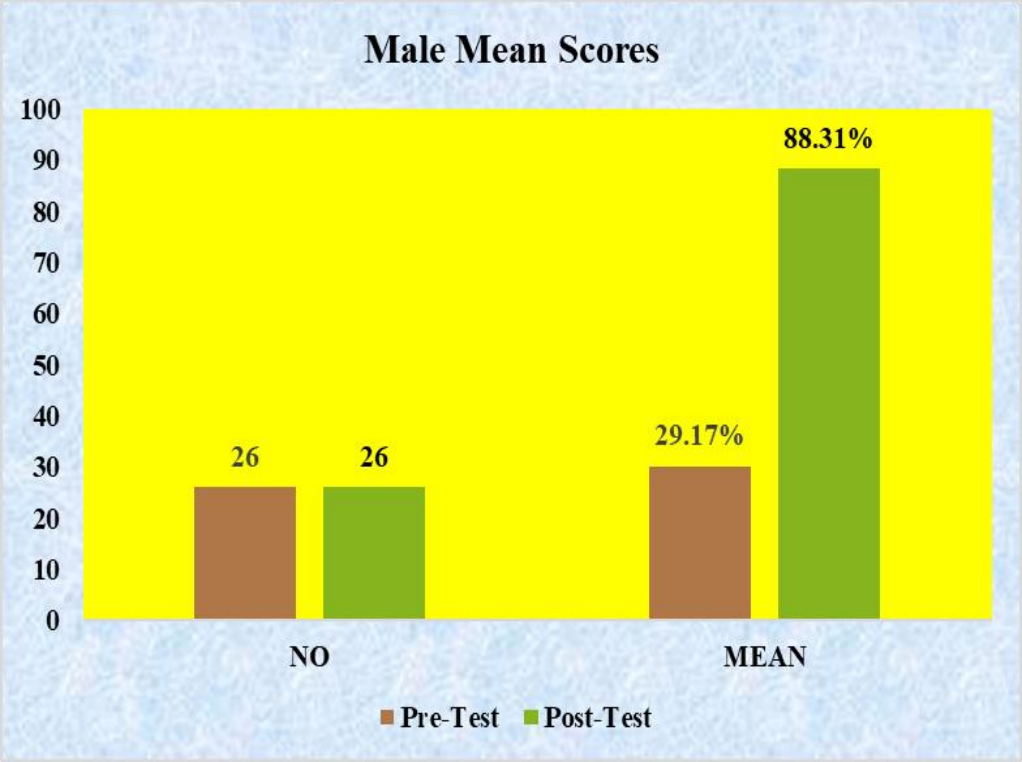

Figure: 13 Mean scores of male pre-test and post-test in teachers

TABLE - 16

SIGNIFICANT DIFFERENCE OF TEACHERS EDUCANDY APP SCORES BETWEEN FEMALE PRE-TEST AND POST-TEST

CATEGORY	NO	MEAN	SD	't' VALUE	REMARKS
Pre-Test	14	30.07	6.06	2.81*	*SD
Post-Test	14	88.86	29.85		

***SD- Significant Difference**

't' ratio at 0.01 level of confidence for the degree of freedom (df) at 26=2.763

Discussions on Educandy App

The collected data from female pre - test and post - test on educandy app levels of the female teachers have been statistically analyzed by using 't' test and the results are presented in the Table- 16.

Table - 16 shows that mean scores of pre-test in female teachers was 30.07% and standard deviation score was 6.06% respectively.

Table - 16 shows that post-test mean scores of female teachers was 88.86% and its post-test standard deviation score was 29.85% respectively.

The mean differences between the pre-test and the post-test were 58.79% respectively.

The obtained ‘t’ value 2.81 in female teachers with respect to the educandy app level was significantly higher than the required ‘t’ value (2.763) and it was proved there is a significant difference in the educandy app level of the female teachers. So, Hypotheses of present study is rejected.

The obtained mean values in female teachers pre-test and post-test values are represented through bar diagram for better understanding of the results.

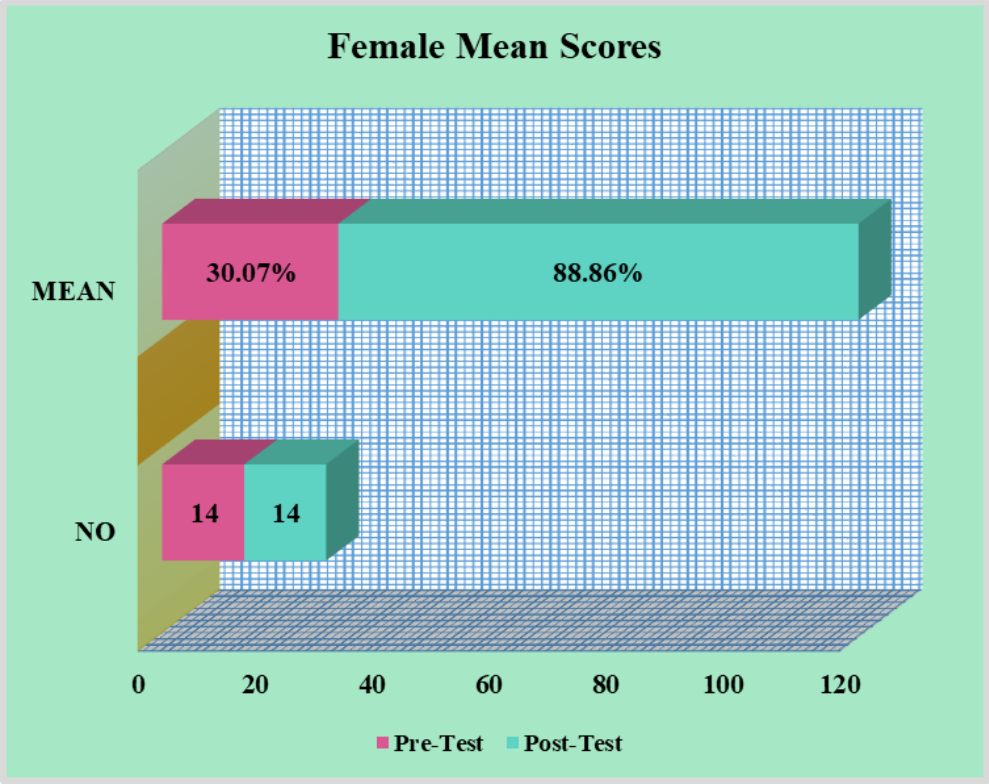

Figure: 14 Mean scores of female pre-test and post-test in teachers

TABLE - 17

SIGNIFICANT DIFFERENCE OF TEACHERS EDUCANDY APP SCORES BETWEEN MALE AND FEMALE PRE-TEST

CATEGORY		NO	MEAN	SD	't' VALUE	REMARKS
Male & Female	Pre-test	26	29.17	7.25	0.09*	*NSD
	Pre-test	14	30.07	6.06		

***NSD No Significant Difference**

't' ratio at 0.01 level of confidence for the degree of freedom (df) at 38=2.704

Discussions on Educandy App

The collected data from male and female pre - test on educandy app levels of the male and female teachers have been statistically analyzed by using 't' test and the results are presented in the Table- 17.

Table - 17 shows that mean scores of pre-test in male and female teachers was 29.17% and standard deviation score was 7.25% respectively.

Table - 17 shows that pre-test mean scores of male and female teachers was 30.07% and its pre-test standard deviation score was 6.06% respectively.

The mean differences between the male and female pre-test were 0.9% respectively.

The obtained ‘t’ value 0.09 in male and female teachers with respect to the educandy app level was significantly less than the required ‘t’ value (2.704) and it was proved there is no significant difference in the educandy app level of the male and female teachers. So, Hypotheses of present study is accepted.

The obtained mean values in male and female teacher’s pre-test values are represented through bar diagram for better understanding of the results.

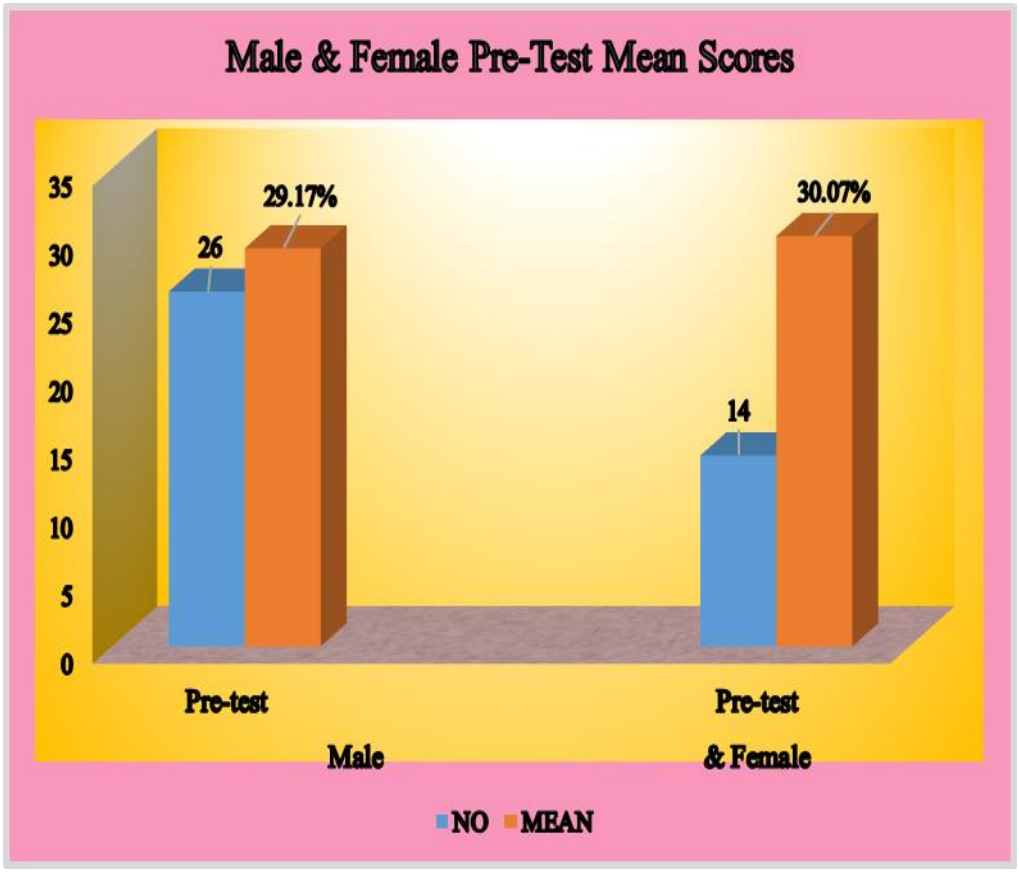

Figure: 15 Mean scores of male & female teachers in pre-test

TABLE - 18

SIGNIFICANT DIFFERENCE OF TEACHERS EDUCANDY APP SCORES BETWEEN MALE AND FEMALE POST-TEST

CATEGORY		NO	MEAN	SD	't' VALUE	REMARKS
Male &	Post-test	26	88.31	29.80	0.07*	*NSD
Female	Post-test	14	88.85	29.85		

***NSD- No Significant Difference**

't' ratio at 0.01 level of confidence for the degree of freedom (df) at 38=2.704

Discussions on Educandy App

The collected data from male and female pre - test on educandy app levels of the male and female teachers have been statistically analyzed by using 't' test and the results are presented in the Table- 18.

Table - 18 shows that mean scores of post-test in male and female teachers was 88.31% and standard deviation score was 29.80% respectively.

Table - 18 shows that post-test mean scores of male and female teachers was 88.85% and its pre-test standard deviation score was 29.85% respectively.

The mean differences between the male and female post-test were 0.54% respectively.

The obtained ‘t’ value 0.07 in male and female teachers with respect to the educandy app level was significantly less than the required ‘t’ value (2.704) and it was proved there is no significant difference in the educandy app level of the male and female teachers. So, Hypotheses of present study is accepted.

The obtained mean values in male and female teacher’s pre-test values are represented through bar diagram for better understanding of the results.

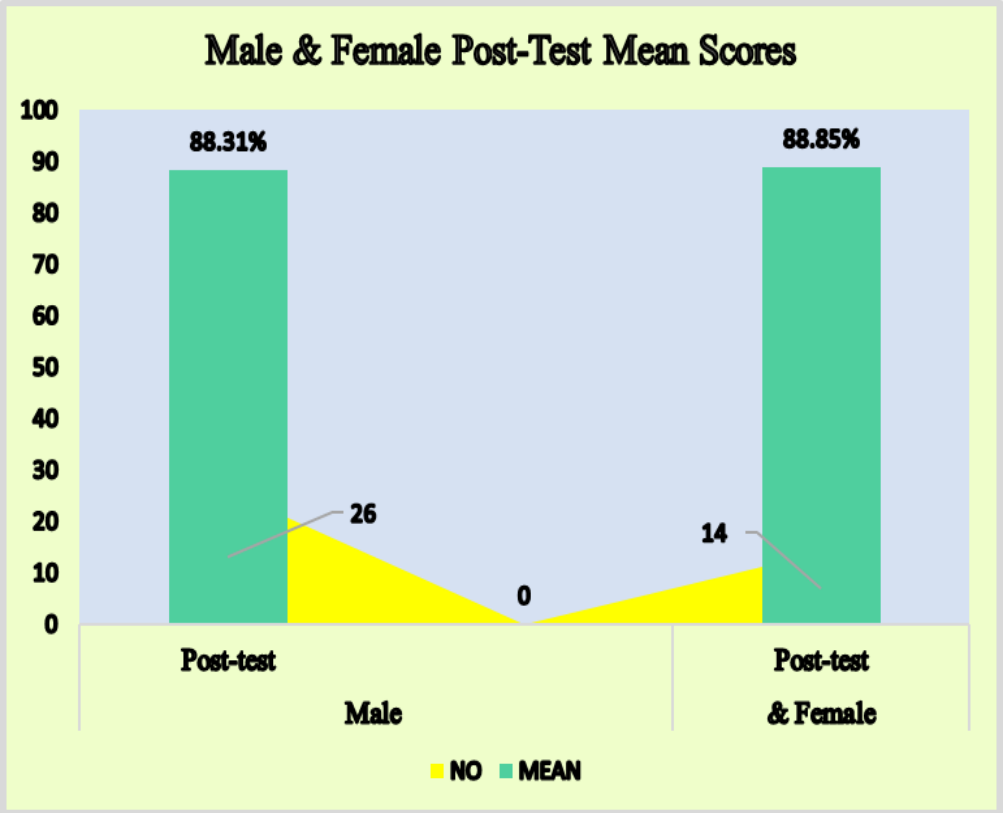

Figure: 16 Mean scores of male & female teachers in post-test

TABLE - 19

SIGNIFICANT DIFFERENCE OF TEACHERS EDUCANDY APP SCORES BETWEEN JOB EXPERIENCE UPTO-25 YEARS PRE-TEST AND POST-TEST

CATEGORY	NO	MEAN	SD	't' VALUE	REMARKS
Pre-Test	29	30.06	6.24	6.92*	*SD
Post-Test	29	85.59	28.90		

***SD- Significant Difference**
't' ratio at 0.01 level of confidence for the degree of freedom (df) at 56=2.660

Discussions on Educandy App

The collected data from pre - test and post - test on educandy app levels of the Job Experience upto-25 years teachers have been statistically analyzed by using 't' test and the results are presented in the Table- 19.

Table - 19 shows that mean scores of pre-test in Job Experience upto-25 years teachers was 30.06% and standard deviation score was 6.24% respectively.

Table - 19 shows that post-test mean scores of Job Experience upto-25 years teachers was 85.59% and its post-test standard deviation score was 28.90% respectively.

The mean differences between the pre-test and the post-test were 55.53% respectively.

The obtained ‘t’ value 6.92 in Job Experience upto-25 years teachers with respect to the educandy app level was significantly higher than the required ‘t’ value (2.660) and it was proved there is a significant difference in the educandy app level of the Job Experience upto-25 years teachers. So, Hypotheses of present study is rejected.

The obtained mean values in Job Experience upto-25 years teachers pre-test and post-test values are represented through bar diagram for better understanding of the results.

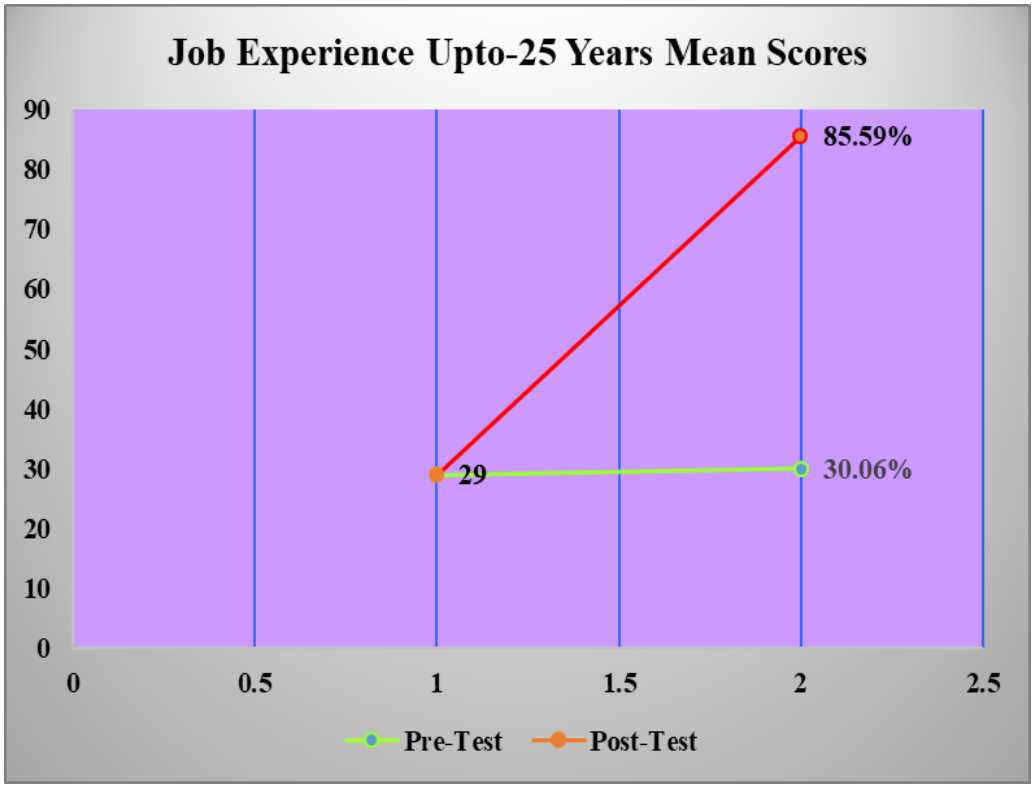

Figure: 17 Mean scores of upto-15 year’s teachers in pre-test and post-test

TABLE - 20

SIGNIFICANT DIFFERENCE OF TEACHERS EDUCANDY APP SCORES BETWEEN JOB EXPERIENCE ABOVE-25 YEARS PRE-TEST AND POST-TEST

CATEGORY	NO	MEAN	SD	't' VALUE	REMARKS
Pre-Test	11	32.36	6.30	3.33*	*SD
Post-Test	11	90.09	32.09		

***SD- Significant Difference**

't' ratio at 0.01 level of confidence for the degree of freedom (df) at 20=2.845

Discussions on Educandy App

The collected data from pre - test and post - test on educandy app levels of the Job Experience above-25 years teachers have been statistically analyzed by using 't' test and the results are presented in the Table- 20.

Table - 20 shows that mean scores of pre-test in Job Experience above-25 years teachers was 32.36% and standard deviation score was 6.30% respectively.

Table - 20 shows that post-test mean scores of Job Experience above-15 years teachers was 90.09% and its post-test standard deviation score was 32.09% respectively.

The mean differences between the pre-test and the post-test were 57.73% respectively.

The obtained ‘t’ value 3.33 in Job Experience above-25 years teachers with respect to the educandy app level was significantly higher than the required ‘t’ value (2.845) and it was proved that there is a significant difference in the educandy app level of the Job Experience above-25 years teachers. So, Hypotheses of the present study is rejected.

The obtained mean values in Job Experience above-25 years teachers pre-test and post-test values are represented through bar diagram for better understanding of the results.

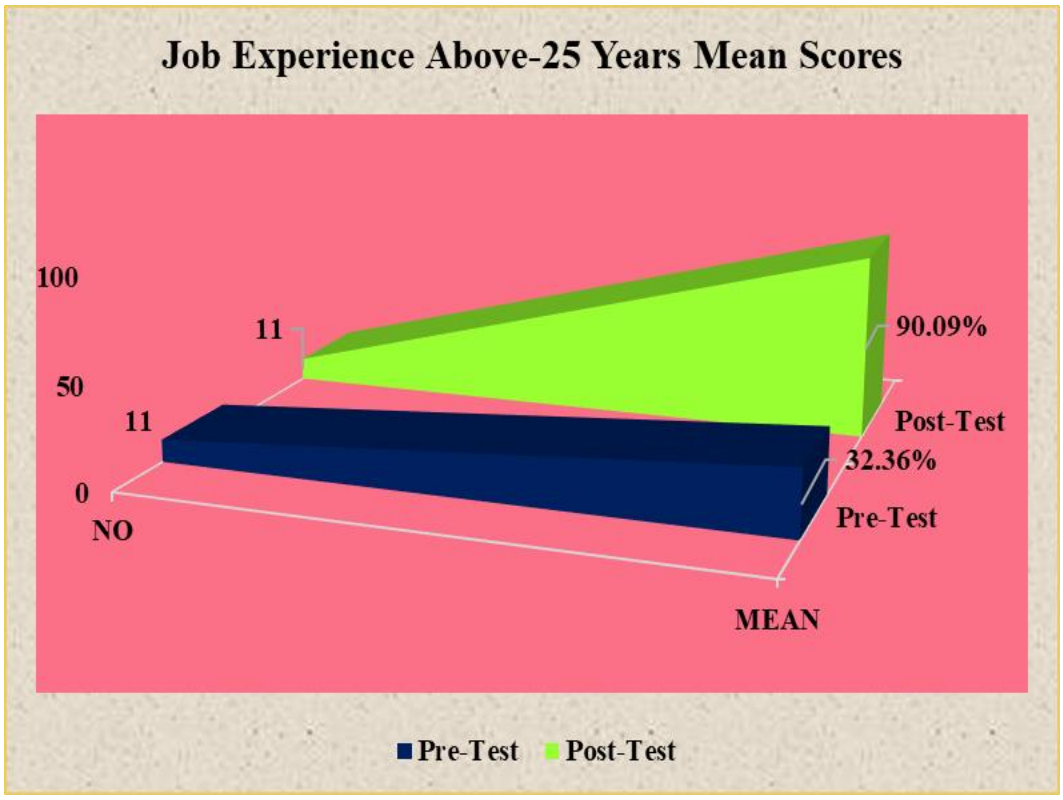

Figure: 18 Mean scores of above-25 year’s teachers in pre-test and post-test

TABLE - 21

SIGNIFICANT DIFFERENCE OF TEACHERS EDUCANDY APP SCORES BETWEEN UPTO-25 YEARS AND ABOVE-25 YEARS PRE-TEST

CATEGORY		NO	MEAN	SD	't' VALUE	REMARKS
Upto-25 years & Above -25 years	**Pre-Test**	29	30.06	6.30	0.46*	*NSD
	Pre-Test	11	32.36	6.24		

***NSD- No Significant Difference**
't' ratio at 0.01 level of confidence for the degree of freedom (df) at 38=2.704

Discussions on Educandy App

The collected data from pre - test on educandy app levels of the job experience upto-25 years and above-25 years teachers have been statistically analyzed by using 't' test and the results are presented in the Table- 21.

Table - 21 shows that mean scores of pre-test in upto-25 years and above-25 years teachers score was 30.06% and standard deviation score was 6.30% respectively.

Table - 21 shows that pre-test mean scores of upto-25 years and above-25 years teachers score was 32.36% and its pre-test standard deviation score was 6.24% respectively.

The mean differences between the upto-25 years and above-25 years pre-test were 2.30% respectively.

The obtained ‘t’ value 0.46 in upto-25 years and above-25 years teachers with respect to the educandy app level was significantly less than the required ‘t’ value (2.704) and it was proved that there is no significant difference in the educandy app level of the up to-25 years and above-25 years teachers. So, Hypotheses of the present study is accepted.

The obtained mean values in upto-25 years and above-25 years teachers pre-test values are represented through bar diagram for better understanding of the results.

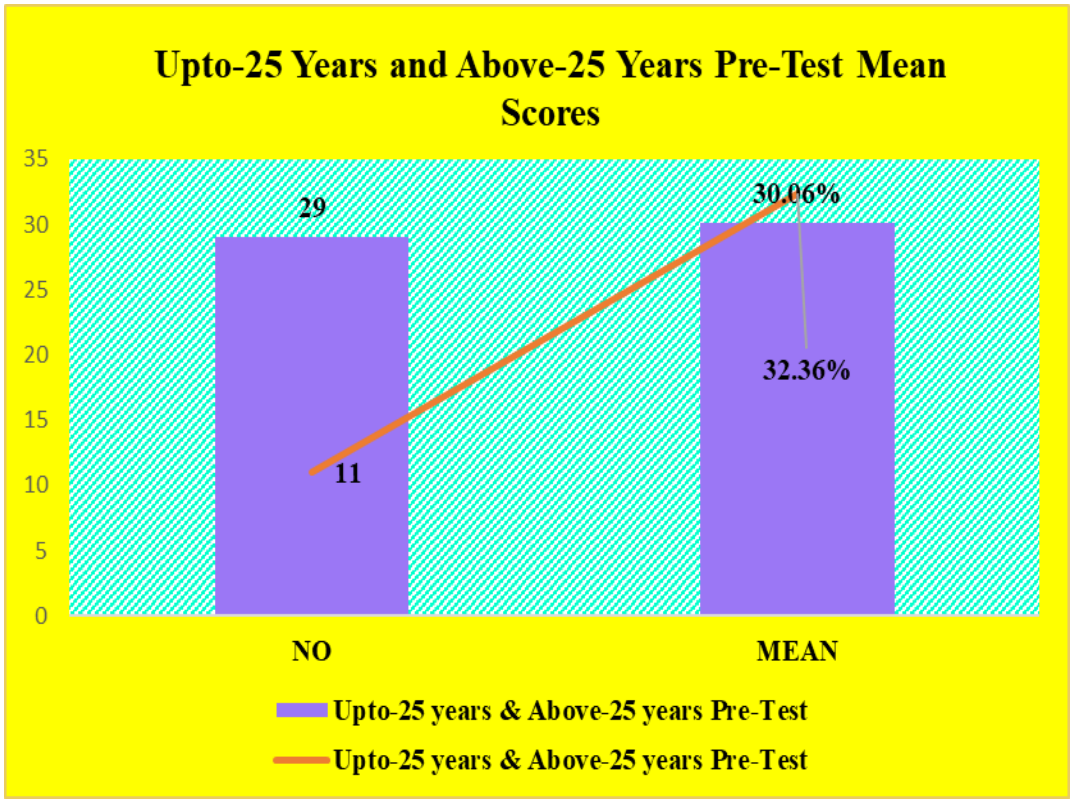

Figure: 19 Mean scores of up to-15 years and above-15 years teachers in pre-test

TABLE - 22

SIGNIFICANT DIFFERENCE OF TEACHERS EDUCANDY APP SCORES BETWEEN UPTO-25 YEARS AND ABOVE-25 YEARS POST-TEST

CATEGORY		NO	MEAN	SD	't' VALUE	REMARKS
Upto-15 years &	**Post-Test**	29	85.59	28.90	0.06*	*NSD
Above-15 years	**Post-Test**	11	91.01	32.09		

*

NSD- No Significant Difference

't' ratio at 0.01 level of confidence for the degree of freedom (df) at 38=2.704

Discussions on Educandy App

The collected data from post - test on educandy app levels of the upto-25 years and above-25 years teachers have been statistically analyzed by using 't' test and the results are presented in the Table- 22.

Table - 22 shows that mean scores of post-test in upto-25 years and above-25 years teachers score was 85.59% and standard deviation score was 28.90% respectively.

Table - 22 shows that post-test mean scores of upto-25 years and above-25 years teachers was 91.01% and its pre-test standard deviation score was 32.09% respectively.

The mean differences between the upto-25 years and above-25 years post-test were 6.58% respectively.

The obtained ‘t’ value 0.06 in upto-25 years and above-25 years teachers with respect to the educandy app level was significantly less than the required ‘t’ value (2.704) and it was proved there is no significant difference in the educandy app level of the upto-25 years and above-25 years teachers. So, Hypotheses of present study is accepted.

The obtained mean values of upto-25 years and above-25 years teachers post-test values are represented through bar diagram for better understanding of the results.

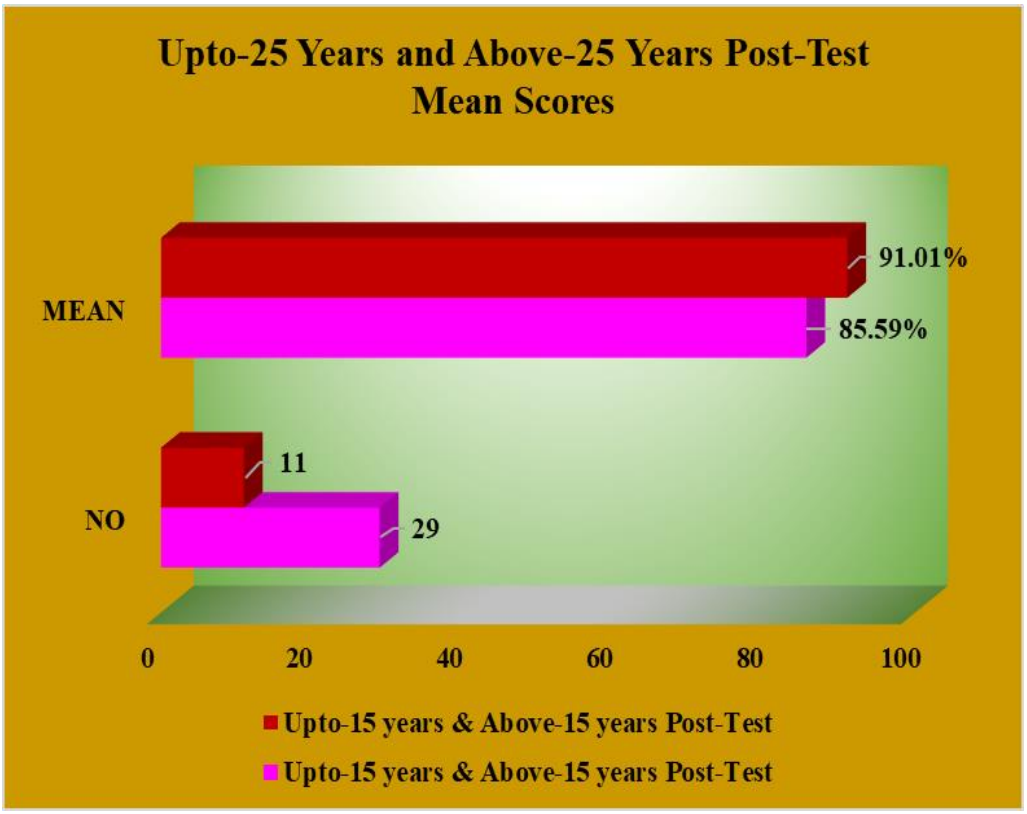

Figure: 20 Mean scores of up to-15 years and above-15 years teachers in post-test

TABLE - 23

SIGNIFICANT DIFFERENCE OF EDUCANDY APP SCORES BETWEEN PUPS-TEACHERS PRE-TEST AND POST-TEST

CATEGORY	NO	MEAN	SD	't' VALUE	REMARKS
Pre-Test	27	30.6	6.3	2.91 *	*SD
Post-Test	27	89.18	29.97		

***SD- Significant Difference**

't' ratio at 0.01 level of confidence for the degree of freedom (df) at 52=2.660

Discussions on Educandy App

The collected data from pre - test and post - test on educandy app levels of the pups teachers have been statistically analyzed by using 't' test and the results are presented in the Table- 23.

Table - 23 shows that mean scores of pre-test in pups teachers score was 30.6% and standard deviation score was 6.3% respectively.

Table - 23 shows that post-test mean scores of pups teachers score was 89.18% and its post-test standard deviation score was 29.97% respectively.

The mean differences between the pre-test and the post-test were 59.12% respectively.

The obtained ‘t’ value 2.91 in Job pups teachers with respect to the educandy app level was significantly higher than the required ‘t’ value (2.660) and it was proved there is a significant difference in the educandy app level of the pups teachers. So, Hypotheses of present study is rejected.

The obtained mean values in pups teachers pre-test and post-test values are represented through bar diagram for better understanding of the results.

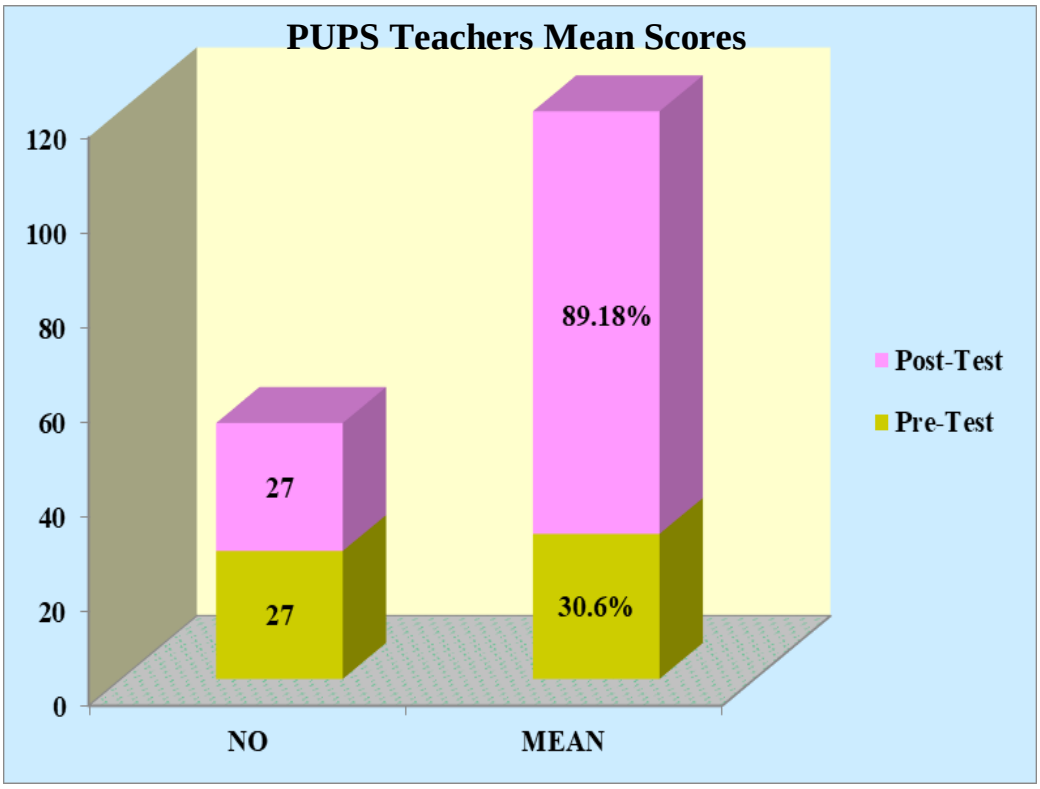

Figure: 21 Mean scores of PUPS teachers in pre-test and post-test

TABLE - 24

SIGNIFICANT DIFFERENCE OF EDUCANDY APP SCORES BETWEEN PUMS TEACHERS PRE-TEST AND POST-TEST

CATEGORY	NO	MEAN	SD	't' VALUE	REMARKS
Pre-Test	13	28.79	6.64	2.91*	*SD
Post-Test	13	89.57	29.0		

***SD- Significant Difference**

't' ratio at 0.01 level of confidence for the degree of freedom (df) at 24=2.797

Discussions on Educandy App

The collected data from pre - test and post - test on educandy app levels of the pums teachers have been statistically analyzed by using 't' test and the results are presented in the Table- 24.

Table - 24 shows that mean scores of pre-test in pums teachers score was 28.79% and standard deviation score was 6.64% respectively.

Table - 24 shows that post-test mean scores of pums teachers score was 89.57% and its post-test standard deviation score was 29.0% respectively.

The mean differences between the pre-test and the post-test were 60.78% respectively.

The obtained ‘t’ value 2.91 in pums teachers with respect to the educandy app level was significantly higher than the required ‘t’ value (2.797) and it was proved that there is a significant difference in the educandy app level of the pums teachers. So, Hypotheses of the present study is rejected.

The obtained mean values in pums teachers pre-test and post-test values are represented through bar diagram for better understanding of the results.

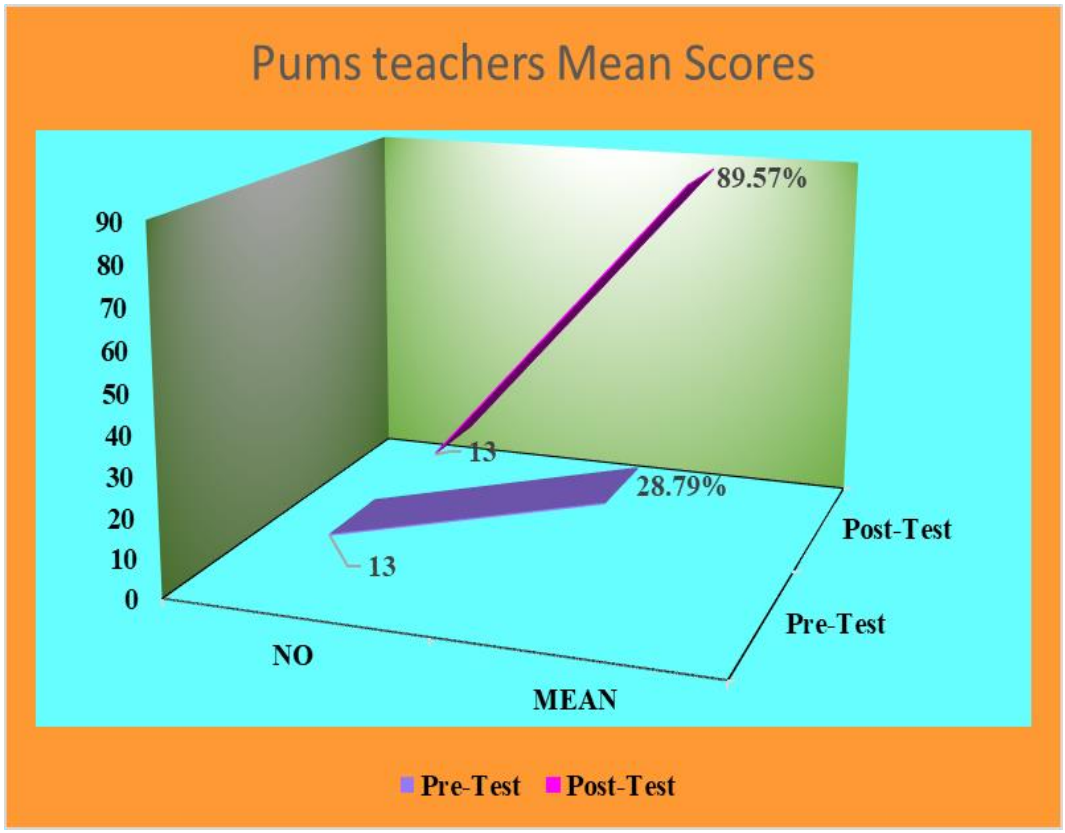

Figure: 22 Mean scores of PUMS teachers in pre-test and post-test

TABLE - 25

SIGNIFICANT DIFFERENCE OF EDUCANDY APP SCORES BETWEEN PUPS TEACHERS AND PUMS TEACHERS PRE-TEST

CATEGORY		NO	MEAN	SD	't' VALUE	REMARKS
Pups Teachers & Pums Teachers	Pre-Test	27	30.6	6.3	0.42*	*NSD
	Pre-Test	13	28.79	6.64		

***NSD- No Significant Difference**

't' ratio at 0.01 level of confidence for the degree of freedom (df) at 38=2.704

Discussions on Educandy App

The collected data from pre - test on educandy app levels of the pups teachers and pums teachers have been statistically analyzed by using 't' test and the results are presented in the Table- 25.

Table - 25 shows that mean scores of pre-test in pups teachers and pums teachers score was 30.6% and standard deviation score was 6.3% respectively.

Table - 25 shows that pre-test mean scores of pups teachers and pums teachers score was 28.79% and its pre-test standard deviation score was 6.64% respectively.

The mean differences between the pups teachers and pums teachers years pre-test were 1.81% respectively.

The obtained ‘t’ value 0.42 in pups teachers and pums teachers with respect to the educandy app level was significantly lower than the required ‘t’ value (2.704) and it was proved that there is no significant difference in the educandy app level of the pups teachers and pums teachers. So, Hypotheses of the present study is accepted.

The obtained mean values in pups teachers and pums teachers pre-test values are represented through bar diagram for better understanding of the results.

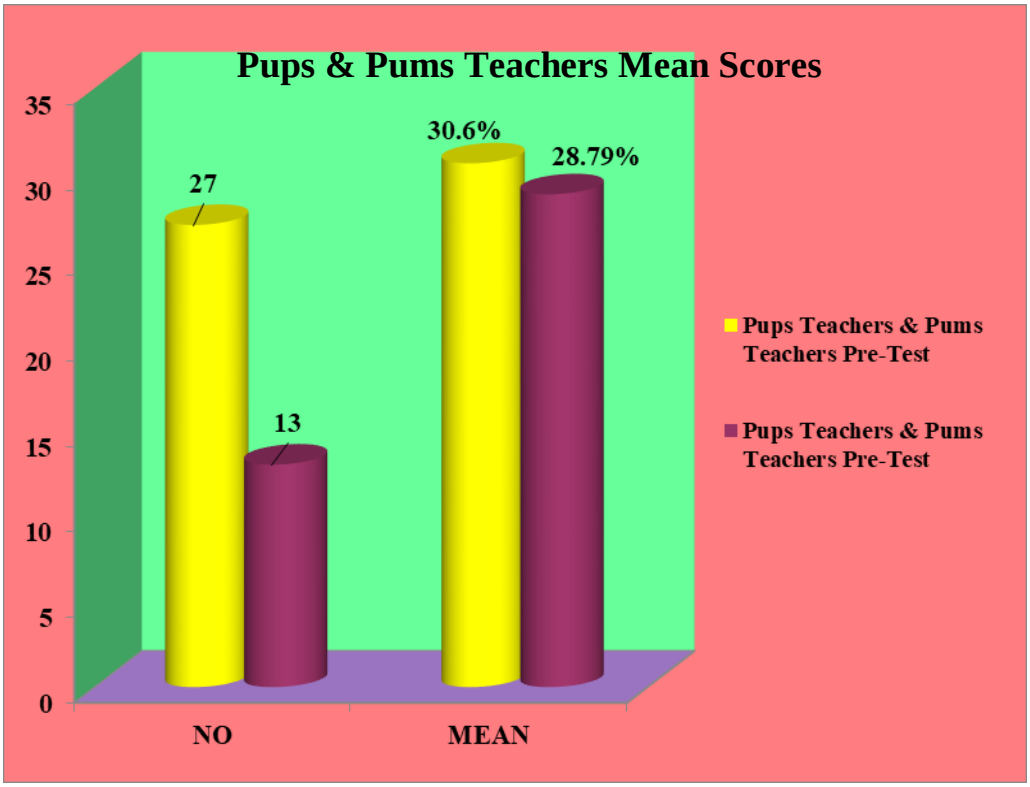

Figure: 23 Mean scores of pups and PUMS teachers in pre-test

TABLE - 26

SIGNIFICANT DIFFERENCE OF EDUCANDY APP SCORES BETWEEN PUPS TEACHERS AND PUMS TEACHERS POST-TEST

CATEGORY		NO	MEAN	SD	't' VALUE	REMARKS
PUPS Teachers & PUMS Teachers	Post-Test	27	89.18	29.97	0.49*	*NSD
	Post-Test	13	89.57	29.0		

***NSD- No Significant Difference**

't' ratio at 0.01 level of confidence for the degree of freedom (df) at 38=2.704

Discussions on Educandy App

The collected data from post - test on educandy app levels of the pups teachers and pums teachers have been statistically analyzed by using 't' test and the results are presented in the Table- 26.

Table - 26 shows that mean scores of post-test in PUPS teachers and PUMS teachers score was 89.18% and standard deviation score was 29.97% respectively.

Table - 26 shows that post-test mean scores of PUPS teachers and PUMS teachers was 89.57% and its pre-test standard deviation score was 29.0% respectively.

The mean differences between the PUPS teachers and PUMS teachers post-test were 0.39% respectively.

The obtained ‘t’ value 0.49 in PUPS teachers and PUMS teachers with respect to the educandy app level was significantly less than the required ‘t’ value (2.704) and it was proved there is no significant difference in the educandy app level of the pups teachers and pums teachers. So, Hypotheses of present study is accepted.

The obtained mean values of PUPS teachers and PUMS teachers post-test values are represented through bar diagram for better understanding of the results.

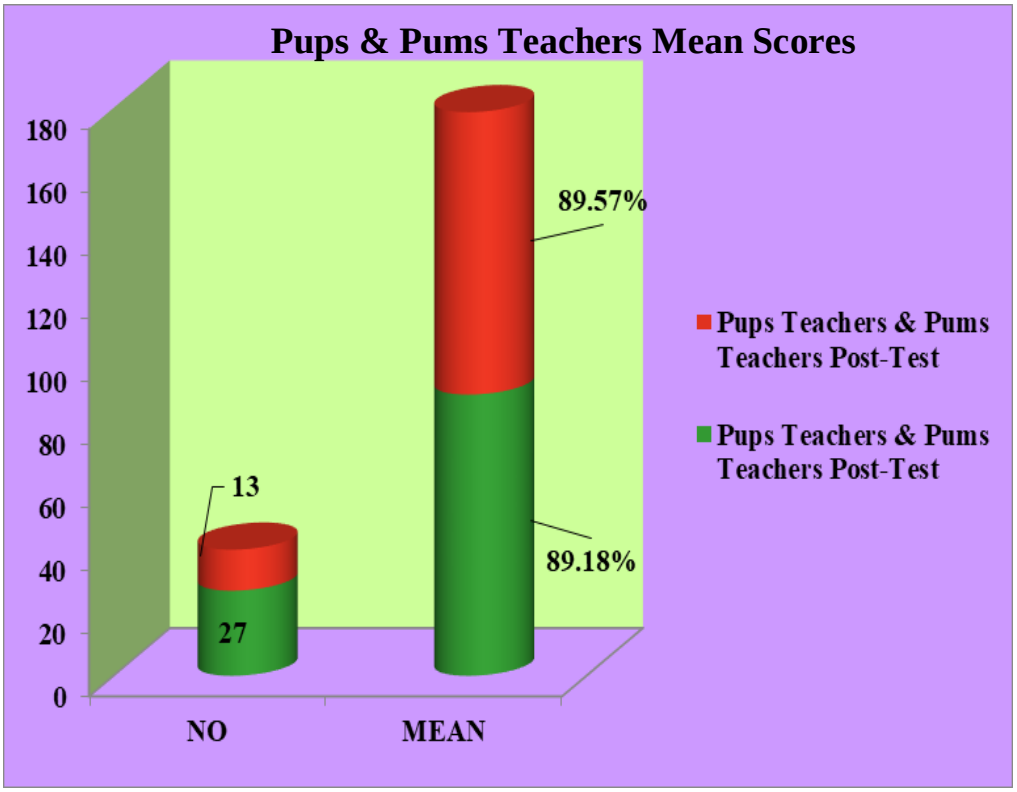

Figure: 24 Mean scores of PUPS and PUMS teachers in post-test

TABLE - 27

SIGNIFICANT DIFFERENCE OF EDUCANDY APP SCORES BETWEEN UG DEGREE TEACHERS PRE-TEST AND POST-TEST

CATEGORY	NO	MEAN	SD	't' VALUE	REMARKS
Pre-Test	07	31.72	9.9	5.0*	*SD
Post-Test	07	86.85	30.0		

***SD- Significant Difference**

't' ratio at 0.01 level of confidence for the degree of freedom (df) at 12=3.055

Discussions on Educandy App

The collected data from pre - test and post - test on educandy app levels of the UG degree teachers have been statistically analyzed by using 't' test and the results are presented in the Table- 27.

Table - 27 shows that mean scores of pre-test in UG degree teachers score was 31.72% and standard deviation score was 9.9% respectively.

Table - 27 shows that post-test mean scores of UG degree teachers score was 86.85% and its post-test standard deviation score was 30.0% respectively.

The mean differences between the pre-test and the post-test were 55.13% respectively.

The obtained ‘t’ value 5.0 in UG degree teachers with respect to the educandy app level was significantly higher than the required ‘t’ value (3.055) and it was proved there is a significant difference in the educandy app level of the UG degree teachers. So, Hypotheses of present study is rejected.

The obtained mean values in UG degree teachers pre-test and post-test values are represented through bar diagram for better understanding of the results.

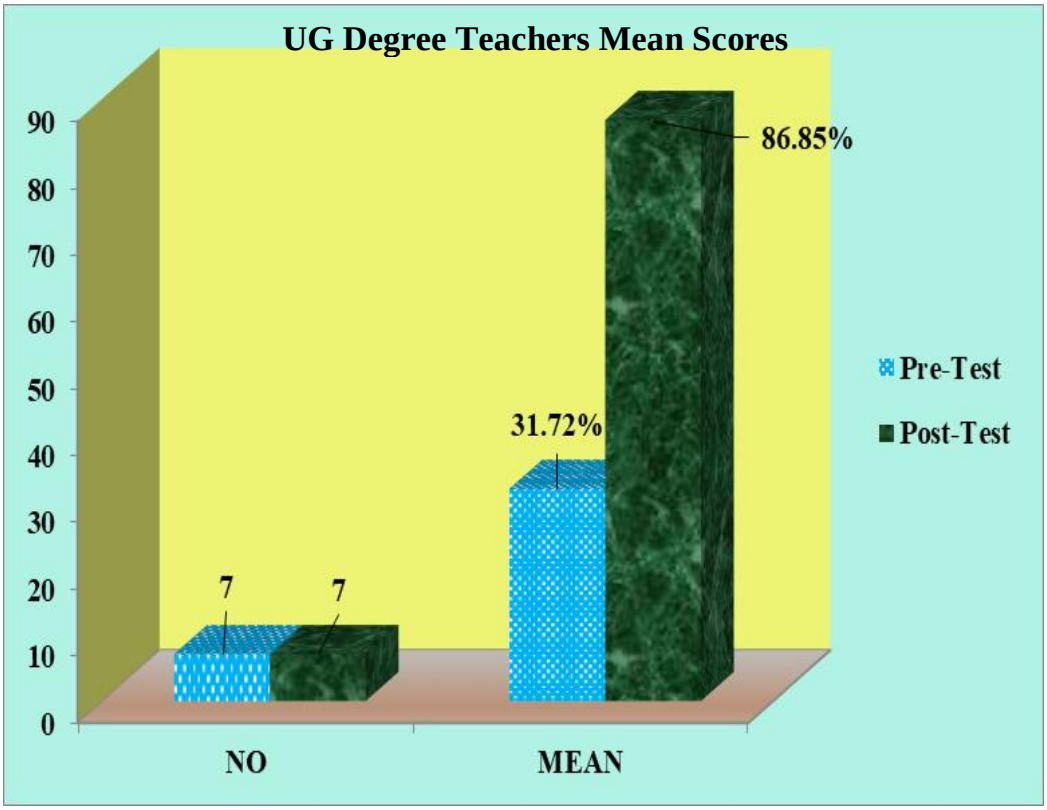

Figure: 25 Mean scores of UG Degree teachers in pre-test and post-test

TABLE - 28

SIGNIFICANT DIFFERENCE OF EDUCANDY APP SCORES BETWEEN PG DEGREE TEACHERS PRE-TEST AND POST-TEST

CATEGORY	NO	MEAN	SD	't' VALUE	REMARKS
Pre-Test	33	30.0	5.97	7.42*	*SD
Post-Test	33	87.57	29.17		

***SD- Significant Difference**

't' ratio at 0.01 level of confidence for the degree of freedom (df) at 64=2.636

Discussions on Educandy App

The collected data from pre - test and post - test on educandy app levels of the PG degree teachers have been statistically analyzed by using 't' test and the results are presented in the Table- 28.

Table - 28 shows that mean scores of pre-test in PG degree teachers score was 30.0% and standard deviation score was 5.97% respectively.

Table - 28 shows that post-test mean scores of PG degree teachers score was 87.57% and its post-test standard deviation score was 29.17% respectively.

The mean differences between the pre-test and the post-test were 57.57% respectively.

The obtained ‘t’ value 7.42 in PG degree teachers with respect to the educandy app level was significantly higher than the required ‘t’ value (2.636) and it was proved that there is a significant difference in the educandy app level of the PG degree teachers. So, Hypotheses of the present study is rejected.

The obtained mean values in PG degree teachers pre-test and post-test values are represented through bar diagram for better understanding of the results.

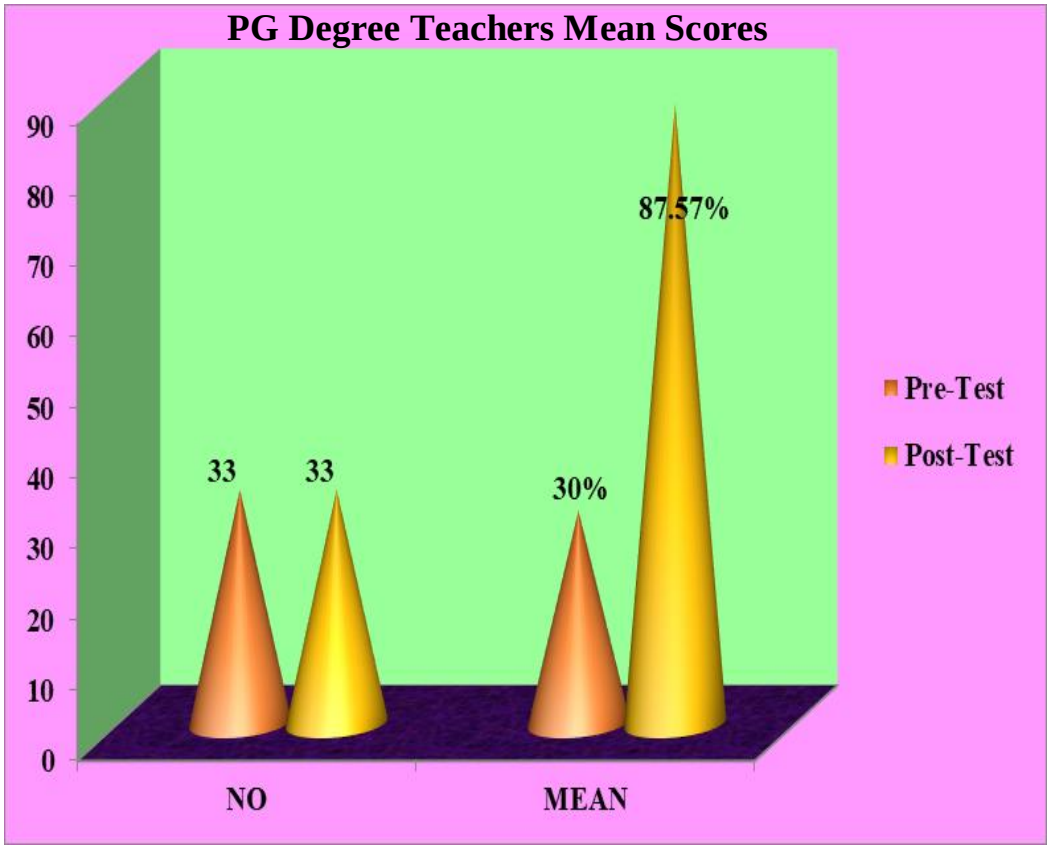

Figure: 26 Mean scores of PG Degree teachers in pre-test and post-test

TABLE - 29

SIGNIFICANT DIFFERENCE OF EDUCANDY APP SCORES BETWEEN UG DEGREE TEACHERS AND PG DEGREE TEACHERS PRE-TEST

CATEGORY		NO	MEAN	SD	't' VALUE	REMARKS
UG Degree Teachers & PG Degree Teachers	Pre-Test	07	31.72	9.9	0.03*	*NSD
	Pre-Test	33	30.0	5.67		

***NSD- No Significant Difference**

't' ratio at 0.01 level of confidence for the degree of freedom (df) at 38=2.704

Discussions on Educandy App

The collected data from pre - test on educandy app levels of the UG degree teachers and PG Degree teachers have been statistically analyzed by using 't' test and the results are presented in the Table- 29.

Table - 29 shows that mean scores of pre-test in UG degree teachers and PG Degree teachers score was 31.72% and standard deviation score was 9.9% respectively.

Table - 29 shows that pre-test mean scores of UG degree teachers and PG Degree teachers score was 30.0% and its pre-test standard deviation score was 5.67% respectively.

The mean differences between the UG degree teachers and PG Degree teachers pre-test were 1.72% respectively.

The obtained ‘t’ value 0.03 in UG degree teachers and PG Degree teachers with respect to the educandy app level was significantly less than the required ‘t’ value (2.704) and it was proved that there is no significant difference in the educandy app level of the UG degree teachers and PG Degree teachers. So, Hypotheses of the present study is accepted.

The obtained mean values in UG degree teachers and PG Degree teachers pre-test values are represented through bar diagram for better understanding of the results.

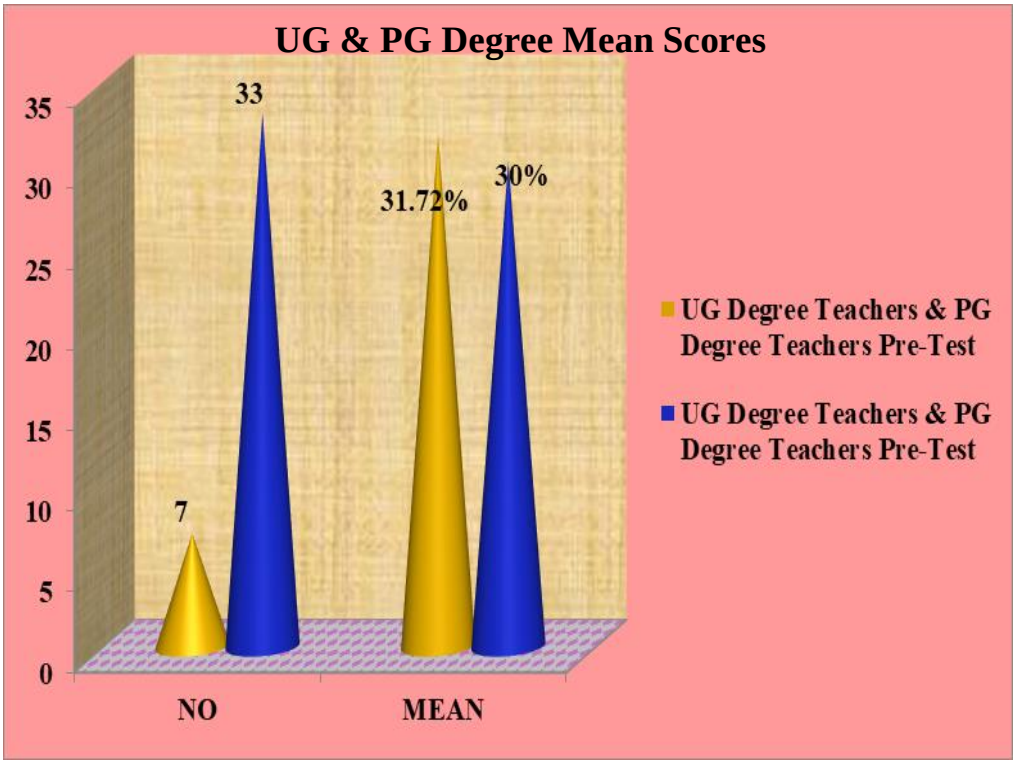

Figure: 27 Mean scores of UG and PG Degree teachers in pre-test

TABLE - 30

SIGNIFICANT DIFFERENCE OF EDUCANDY APP SCORES BETWEEN UG DEGREE TEACHERS AND PG DEGREE TEACHERS POST-TEST

CATEGORY		NO	MEAN	SD	't' VALUE	REMARKS
UG degree Teachers & PG Degree Teachers	Post-Test	07	86.85	30.0	0.33*	*NSD
	Post-Test	33	87.57	29.17		

*****

NSD- No Significant Difference

't' ratio at 0.01 level of confidence for the degree of freedom (df) at 38=2.704

Discussions on Educandy App

The collected data from post - test on educandy app levels of the UG degree teachers and PG Degree teachers have been statistically analyzed by using 't' test and the results are presented in the Table- 30.

Table - 30 shows that mean scores of post-test in UG degree teachers and PG Degree teachers score was 86.85% and standard deviation score was 30.0% respectively.

Table - 30 shows that post-test mean scores of UG degree teachers and PG Degree teachers was 87.57% and its pre-test standard deviation score was 29.17% respectively.

The mean differences between the UG degree teachers and PG Degree teachers post-test were 0.72% respectively.

The obtained ‘t’ value 0.33 in UG degree teachers and PG Degree teachers with respect to the educandy app level was significantly less than the required ‘t’ value (2.704) and it was proved there is no significant difference in the educandy app level of the UG degree teachers and PG Degree teachers. So, Hypotheses of present study is accepted.

The obtained mean values of UG degree teachers and PG Degree teachers post-test values are represented through bar diagram for better understanding of the results.

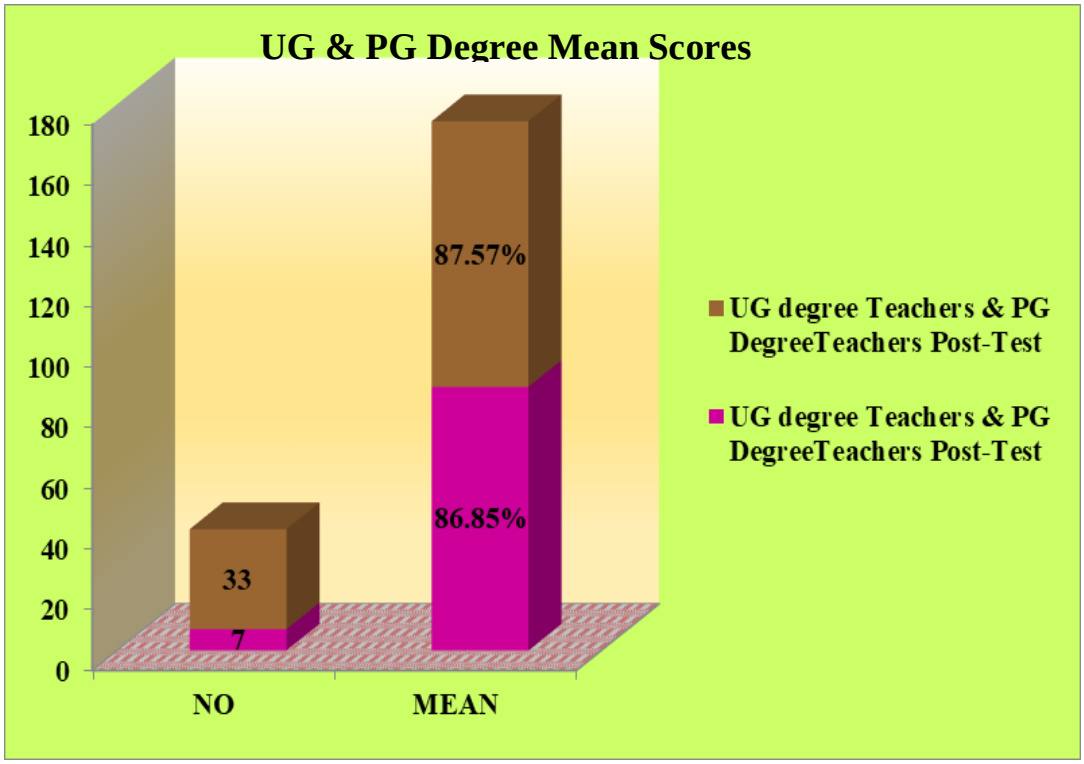

Figure: 28 Mean scores of UG and PG Degree teachers in post-test

TABLE - 31

SIGNIFICANT DIFFERENCE OF EDUCANDY APP SCORES BETWEEN 1 TO 3 ICT TRAINING ATTENDED TEACHERS PRE-TEST AND POST-TEST

CATEGORY	NO	MEAN	SD	't' VALUE	REMARKS
Pre-Test	32	30.05	5.96	7.42*	*SD
Post-Test	32	86.88	29.18		

***SD- Significant Difference**

't' ratio at 0.01 level of confidence for the degree of freedom (df) at 62=2.636

Discussions on Educandy App

The collected data from pre - test and post - test on educandy app levels of the 1 to3 ICT training attended teachers have been statistically analyzed by using 't' test and the results are presented in the Table- 31.

Table - 31 shows that mean scores of pre-test in 1 to3 ICT training attended teachers score was 30.05% and standard deviation score was 5.96% respectively.

Table - 31 shows that post-test mean scores of 1 to3 ICT training attended teachers score was 86.88% and its post-test standard deviation score was 29.18% respectively.

The mean differences between the pre-test and the post-test were 56.83% respectively.

The obtained ‘t’ value 7.42 in 1 to3 ICT training attended teachers with respect to the educandy app level was significantly higher than the required ‘t’ value (2.636) and it was proved there is a significant difference in the educandy app level of the 1 to3 ICT training attended teachers. So, Hypotheses of present study is rejected.

The obtained mean values in 1 to 3 ICT training attended teachers pre-test and post-test values are represented through bar diagram for better understanding of the results.

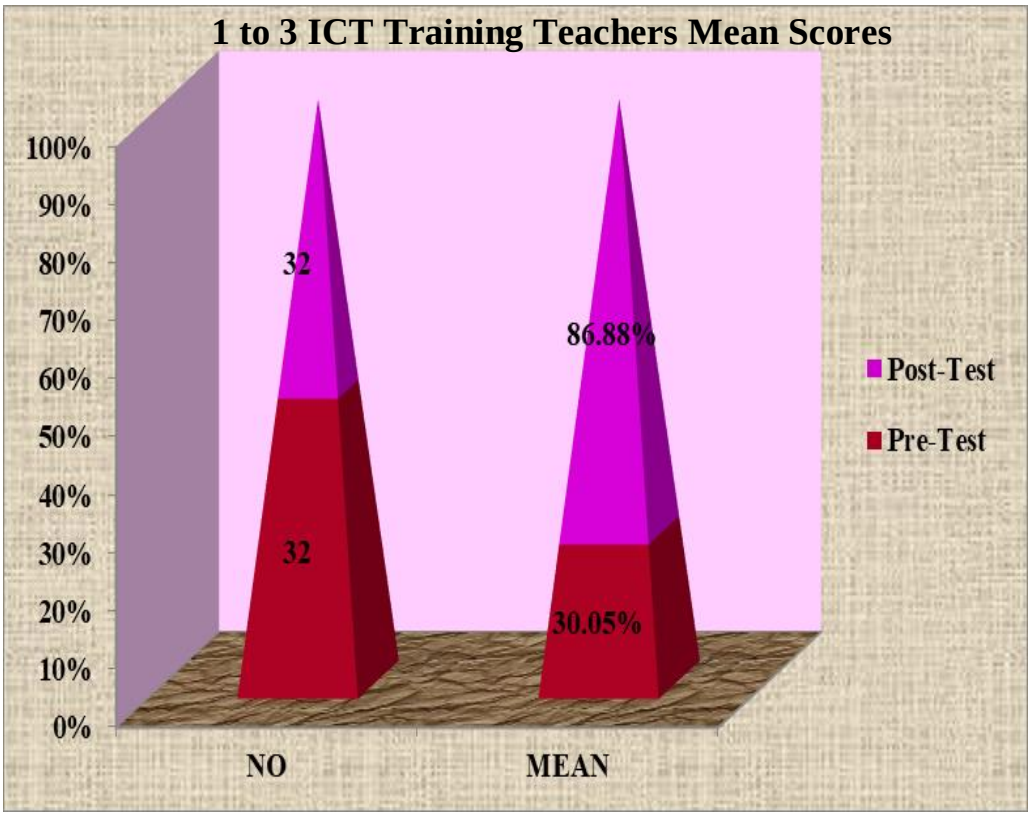

Figure: 29 Mean scores of 1 to 3 ICT Training attended teachers in pre-test and post-test

TABLE - 32

SIGNIFICANT DIFFERENCE OF EDUCANDY APP SCORES BETWEEN 4 TO 5 ICT TRAINING ATTENDED TEACHERS PRE-TEST AND POST-TEST

CATEGORY	NO	MEAN	SD	't' VALUE	REMARKS
Pre-Test	08	29.05	6.10	1.49*	*NSD
Post-Test	08	89.57	30.54		

***NSD- Significant Difference**

't' ratio at 0.01 level of confidence for the degree of freedom (df) at 14=2.977

Discussions on Educandy App

The collected data from pre - test and post - test on educandy app levels of the 4 to5 ICT training attended teachers have been statistically analyzed by using 't' test and the results are presented in the Table- 32.

Table - 32 shows that mean scores of pre-test in 4 to5 ICT training attended teachers score was 29.05% and standard deviation score was 6.10% respectively.

Table - 32 shows that post-test mean scores of 4 to5 ICT training attended teachers score was 89.57% and its post-test standard deviation score was 30.54% respectively.

The mean differences between the pre-test and the post-test were 60.52% respectively.

The obtained ‘t’ value 1.49 in 4 to5 ICT training attended teachers with respect to the educandy app level was significantly lower than the required ‘t’ value (2.977) and it was proved that there is a no significant difference in the educandy app level of the 4 to5 ICT training attended teachers. So, Hypotheses of the present study is accepted.

The obtained mean values in 4 to5 ICT training attended teachers pre-test and post-test values are represented through bar diagram for better understanding of the results.

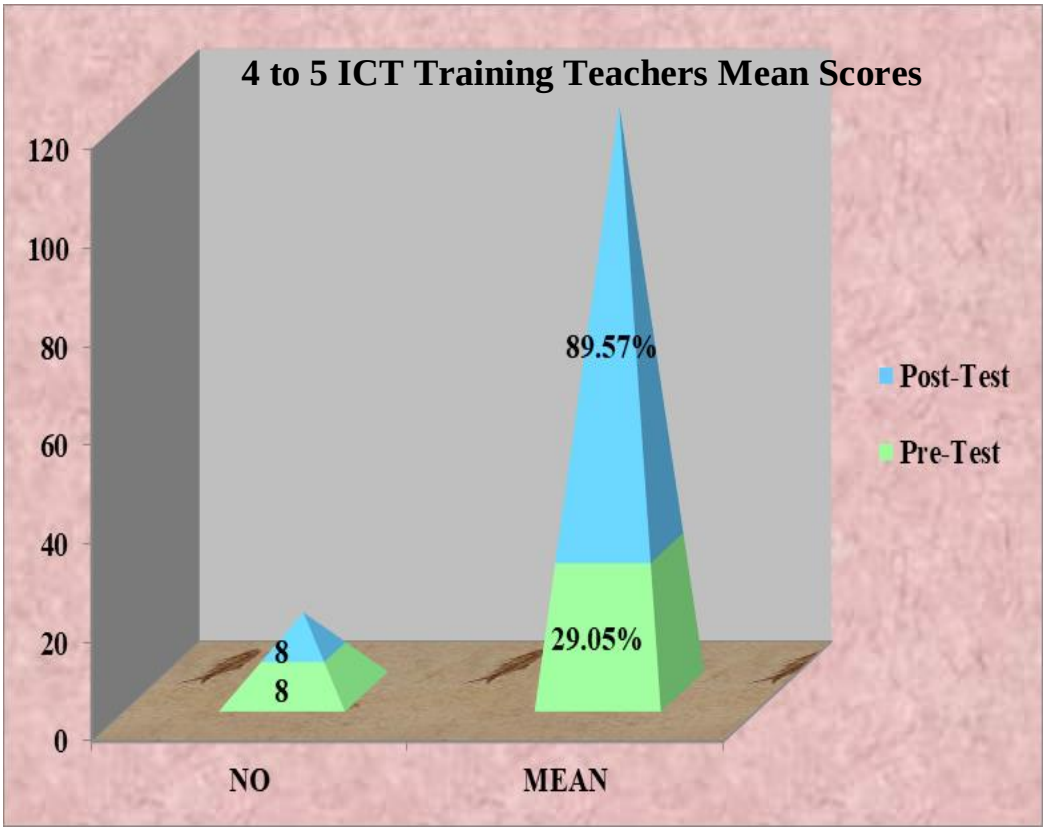

Figure: 30 Mean scores of 4 to 5 ICT training attended teachers in pre-test and post-test

TABLE - 33

SIGNIFICANT DIFFERENCE OF EDUCANDY APP SCORES BETWEEN 1 TO 3 ICT TRAINING ATTENDED TEACHERS AND 4 TO 5 ICT TRAINING ATTENDED TEACHERS PRE-TEST

CATEGORY		NO	MEAN	SD	't' VALUE	REMARKS
1 to 3 ICT Training Teachers & 4 to ICT Training Teachers	Pre-Test	32	30.05	5.96	0.28*	*NSD
	Pre-Test	08	29.05	6.10		

***NSD- No Significant Difference**
't' ratio at 0.01 level of confidence for the degree of freedom (df) at 38=2.704

Discussions on Educandy App

The collected data from pre - test on educandy app levels of the 1 to 3 ICT training attended teachers and 4 to 5 ICT training attended teachers have been statistically analyzed by using 't' test and the results are presented in the Table- 33.

Table - 33 shows that mean scores of pre-test in 1 to 3 ICT training attended teachers and 4 to 5 ICT training attended teachers score was 30.05% and standard deviation score was 5.96% respectively.

Table - 33 shows that pre-test mean scores of 1 to 3 ICT training attended teachers and 4 to 5 ICT training attended teachers score was 29.05% and its pre-test standard deviation score was 6.10% respectively.

The mean differences between the 1 to 3 ICT training attended teachers and 4 to 5 ICT training attended teachers pre-test were 1.0% respectively.

The obtained ‘t’ value 0.28 in 1 to 3 ICT training attended teachers and 4 to 5 ICT training attended teachers with respect to the educandy app level was significantly less than the required ‘t’ value (2.704) and it was proved that there is no significant difference in the educandy app level of the 1 to 3 ICT training attended teachers and 4 to 5 ICT training attended teachers. So, Hypotheses of the present study is accepted.

The obtained mean values in 1 to 3 ICT training attended teachers and 4 to 5 ICT training attended teachers pre-test values are represented through bar diagram for better understanding of the results.

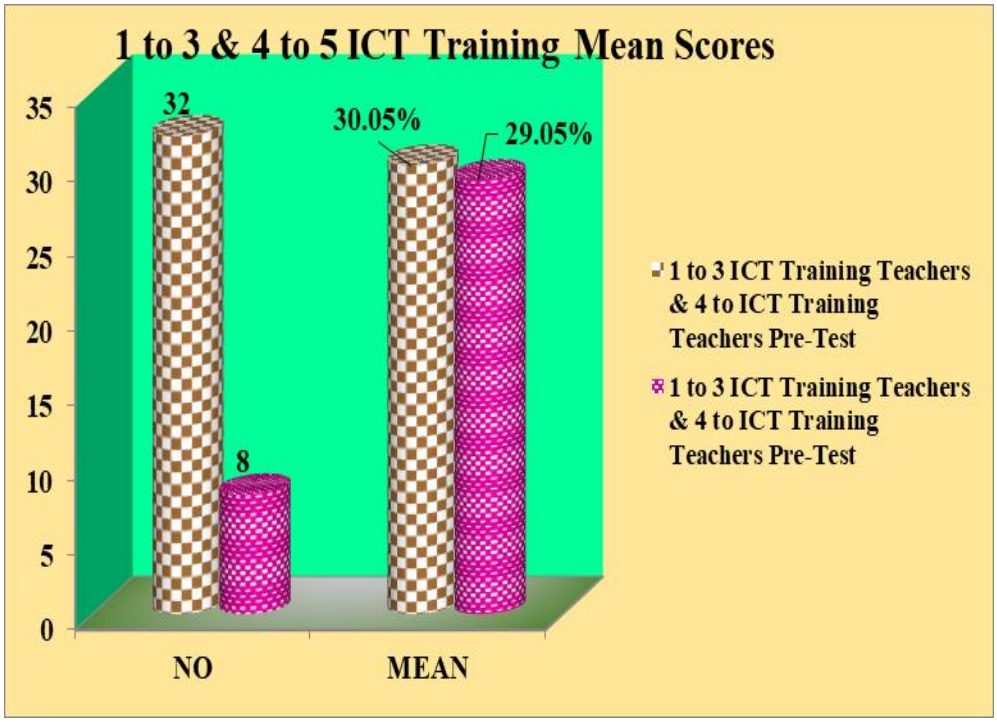

Figure: 31 Mean scores of 1 to3 and 4 to 5 ICT training attended teachers in pre-test

TABLE - 34
SIGNIFICANT DIFFERENCE OF EDUCANDY APP SCORES BETWEEN 1 TO 3 ICT TRAINING ATTENDED TEACHERS AND 4 TO 5 ICT TRAINING ATTENDED TEACHERS POST-TEST

CATEGORY		NO	MEAN	SD	't' VALUE	REMARKS
1 to 3 ICT Training Teachers & 4 to ICT Training Teachers	Post-Test	08	86.88	29.18	0.38*	*NSD
	Post-Test	32	89.57	30.54		

***NSD- No Significant Difference**
't' ratio at 0.01 level of confidence for the degree of freedom (df) at 38=2.704

Discussions on Educandy App

The collected data from post - test on educandy app levels of the 1 to 3 ICT training attended teachers and 4 to 5 ICT training attended teachers have been statistically analyzed by using 't' test and the results are presented in the Table- 34.

Table - 34 shows that mean scores of post-test in 1 to 3 ICT training attended teachers and 4 to 5 ICT training attended teachers score was 86.88% and standard deviation score was 29.18% respectively.

Table - 34 shows that post-test mean scores of 1 to 3 ICT training attended teachers and 4 to 5 ICT training attended teachers was 89.57% and its pre-test standard deviation score was 30.54% respectively.

The mean differences between the 1 to 3 ICT training attended teachers and 4 to 5 ICT training attended teacherspost-test were 2.69% respectively.

The obtained ‘t’ value 0.38 in 1 to 3 ICT training attended teachers and 4 to 5 ICT training attended teachers with respect to the educandy app level was significantly less than the required ‘t’ value (2.704) and it was proved there is no significant difference in the educandy app level of the 1 to 3 ICT training attended teachers and 4 to 5 ICT training attended teachers. So, Hypotheses of present study is accepted.

The obtained mean values of 1 to 3 ICT training attended teachers and 4 to 5 ICT training attended teachers post-test values are represented through bar diagram for better understanding of the results.

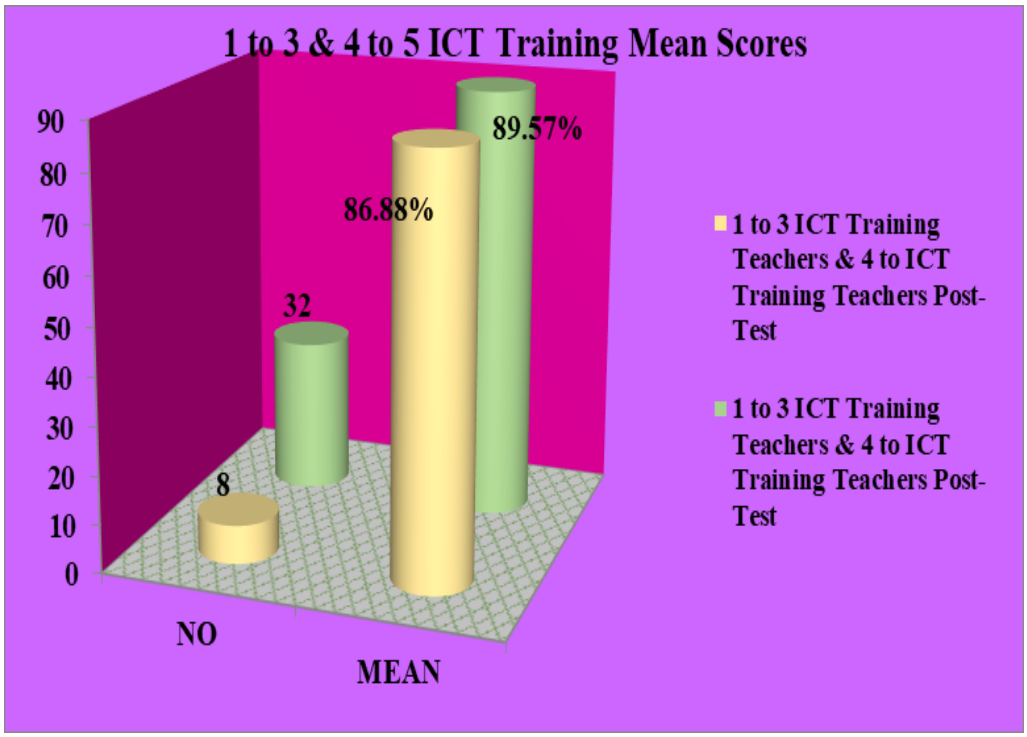

Figure: 32 Mean scores of 1 to 3 and 4 to 5 ICT Training attended Teachers in post-test

4.3 Conclusion

The analysis and interpretation of the collected data provide meaningful insights into the effectiveness and acceptance of interactive games developed through the Educandy app for classroom transactions among primary teachers. The descriptive statistics clearly indicate that most primary teachers hold positive perceptions toward the use of interactive digital games, acknowledging their ability to enhance student engagement, simplify content delivery, and support activity-based learning. Inferential analysis, including ANOVA, further revealed significant differences in the level of usage and attitudes among teachers based on factors such as teaching experience, prior exposure to digital tools, and training received. This suggests that professional development and adequate digital literacy play a crucial role in shaping teachers' readiness to integrate game-based learning.

V. FINDINGS AND CONCLUSION

5.1 Introduction

This chapter presents the major findings and corresponding conclusions derived from the analysis of data collected for the study on developing interactive games for classroom transactions among primary teachers using the Educandy App. The findings have been systematically organized based on the research objectives and hypotheses, enabling a clear understanding of how the intervention influenced teachers' knowledge, skills, and attitudes toward digital game-based learning.

5.2 Major Findings of the Study

- The effectiveness of the Educandy App teachers was tested through a Questionnaire, showing differences between the pre-test and post-test results.
- The teachers' mean score in the pre-test was **31.7%**, whereas their mean score in the post-test was **85.9%**. The mean difference was **54.2%**. The calculated *t* value was **9.02**, while the table value was **2.639**. Since the *t* value was significantly higher than the required table value, the hypothesis of the present study is rejected.
- The teachers' mean scores of domain 1 in the Pre-test was **33.0%**, whereas their mean score in the Post-test was **91.0%**. The mean difference was **52.0%**. The calculated *t* value was **8.40**, while the table value was **2.639**. Since the *t* value was significantly higher than the required table value, the hypothesis of the present study is rejected.
- The teachers' mean scores of domain 2 in the Pre-test was **30.08%**, whereas their mean score in the Post-test was 8**9.0%**. The mean difference was **58.2%**. The calculated *t* value was **4.39**, while the table value was **2.639**. Since the *t*

value was significantly higher than the required table value, the hypothesis of the present study is rejected.

- The teachers' mean scores of domain 3 in the Pre-test was **33.0%**, whereas their mean score in the Post-test was **88.15%**. The mean difference was **54.85%**. The calculated *t* value was **3.5**, while the table value was **2.639**. Since the *t* value was significantly higher than the required table value, the hypothesis of the present study is rejected.
- The teachers' mean scores of domain 4 in the Pre-test was **31.0%**, whereas their mean score in the Post-test was **87.0%**. The mean difference was **56.0%**. The calculated *t* value was **4.7**, while the table value was **2.639**. Since the *t* value was significantly higher than the required table value, the hypothesis of the present study is rejected.
- The mean scores across all four domains showed a remarkable improvement from pre-test (ranging between 30–33) to post-test (ranging between 86–91).
- The calculated **F-values** for all domains (ranging from 284.74 to 355.55) were highly significant at $p < 0.001$, confirming the effectiveness of the intervention.
- The **correlation coefficients (r = 0.65 to 0.72)** revealed a moderate to strong positive relationship between pre-test and post-test scores, indicating that learners with higher initial scores tended to perform better post-intervention, but all participants benefitted substantially.
- Domain 1 showed the **highest post-test mean (90.78)** and the strongest statistical improvement, whereas Domain 3, though improved, had slightly lower correlation values.
- The teachers' mean scores of dharmapuri education district in the Pre-test was **30.2%**, whereas their mean score in the Post-test was **87.0%**. The mean

difference was **56.8%**. The calculated *t* value was **5.71**, while the table value was **2.704**. Since the *t* value was significantly higher than the required table value, the hypothesis of the present study is rejected.

- The teachers' mean scores of harur education district in the Pre-test was **33.2%**, whereas their mean score in the Post-test was **89.2%**. The mean difference was **56.0%**. The calculated *t* value was **2.83**, while the table value was **2.704**. Since the *t* value was significantly higher than the required table value, the hypothesis of the present study is rejected.
- The teachers' mean scores of dharmapuri education district in the Pre-test was **30.2%**, whereas their mean score of harur education district in the Pre-test was **33.2%**. The mean difference was **3.0%**. The calculated *t* value was **0.07**, while the table value was **2.704**. Since the *t* value was significantly lower than the required table value, the hypothesis of the present study is accepted.
- The teachers' mean scores of dharmapuri education district in the Post-test was **86.6%**, whereas their mean score of harur education district in the Post-test was **89.2%**. The mean difference was **3.4%**. The calculated *t* value was **0.18**, while the table value was **2.704**. Since the *t* value was significantly lower than the required table value, the hypothesis of the present study is accepted.
- The teachers' mean scores of male in the Pre-test was **29.17%**, whereas their mean score in the Post-test was **88.31%**. The mean difference was **59.14%**. The calculated *t* value was **4.49**, while the table value was **2.660**. Since the *t* value was significantly higher than the required table value, the hypothesis of the present study is rejected.
- The teachers' mean scores of female in the Pre-test was **30.07%**, whereas their mean score in the Post-test was **88.86%**. The mean difference was **58.79%**. The calculated *t* value was **2.81**, while the table value was **2.763**. Since the *t*

value was significantly higher than the required table value, the hypothesis of the present study is rejected.

- The teachers' mean scores of male in the Pre-test was **29.17%**, whereas their mean score of female in the Pre-test was **30.07%**. The mean difference was **0.9%**. The calculated *t* value was **0.09**, while the table value was **2.704**. Since the *t* value was significantly lower than the required table value, the hypothesis of the present study is accepted.
- The teachers' mean scores of male in the Post-test was **88.31%**, whereas their mean score of female in the Post-test was **88.85%**. The mean difference was **0.54%**. The calculated *t* value was **0.07**, while the table value was **2.704**. Since the *t* value was significantly lower than the required table value, the hypothesis of the present study is accepted.
- The teachers' mean scores of job experience upto-25 in the Pre-test was **30.06%**, whereas their mean score in the Post-test was **85.59%**. The mean difference was **55.53%**. The calculated *t* value was **6.92**, while the table value was **2.660**. Since the *t* value was significantly higher than the required table value, the hypothesis of the present study is rejected.
- The teachers' mean scores of job experience above-25 in the Pre-test was **32.36%**, whereas their mean score in the Post-test was **90.09%**. The mean difference was **57.73%**. The calculated *t* value was **3.33**, while the table value was **2.845**. Since the *t* value was significantly higher than the required table value, the hypothesis of the present study is rejected.
- The teachers' mean scores of job experience upto-25 in the Pre-test was **30.06%**, whereas their mean score of job experience above-25 in the Pre-test was **32.36%**. The mean difference was **2.30%**. The calculated *t* value was

0.46, while the table value was **2.704**. Since the *t* value was significantly lower than the required table value, the hypothesis of the present study is accepted.

- The teachers' mean scores of job experience upto-25 in the Post-test was **85.59%**, whereas their mean score of job experience above-25 in the Post-test was **91.01%**. The mean difference was **6.58%**. The calculated *t* value was **0.06**, while the table value was **2.704**. Since the *t* value was significantly lower than the required table value, the hypothesis of the present study is rejected.
- The teachers' mean scores of pups in the Pre-test was **30.6%**, whereas their mean score in the Post-test was **89.18%**. The mean difference was **59.12%**. The calculated *t* value was **2.91**, while the table value was **2.660**. Since the *t* value was significantly higher than the required table value, the hypothesis of the present study is rejected.
- The teachers' mean scores of pums in the Pre-test was **28.79%**, whereas their mean score in the Post-test was **89.57%**. The mean difference was **60.78%**. The calculated *t* value was **2.91**, while the table value was **2.797**. Since the *t* value was significantly higher than the required table value, the hypothesis of the present study is rejected.
- The teachers' mean scores pups in the Pre-test was **30.06%**, whereas their mean score of pums in the Pre-test was **28.79%**. The mean difference was **1.81%**. The calculated *t* value was **0.42**, while the table value was **2.704**. Since the *t* value was significantly lower than the required table value, the hypothesis of the present study is accepted.
- The teachers' mean scores of pups in the Post-test was **89.18%**, whereas their mean score of pums in the Post-test was **89.57%**. The mean difference was **0.39%**. The calculated *t* value was **0.49**, while the table value was **2.704**.

Since the *t* value was significantly lower than the required table value, the hypothesis of the present study is accepted.

- The teachers' mean scores of UG Degree in the Pre-test was **31.72%**, whereas their mean score in the Post-test was **86.85%**. The mean difference was **55.13%**. The calculated *t* value was **5.0**, while the table value was **3.055**. Since the *t* value was significantly higher than the required table value, the hypothesis of the present study is rejected.
- The teachers' mean scores of PG Degree in the Pre-test was **30.0%**, whereas their mean score in the Post-test was **87.57%**. The mean difference was **57.57%**. The calculated *t* value was **7.42**, while the table value was **2.636**. Since the *t* value was significantly higher than the required table value, the hypothesis of the present study is rejected.
- The teachers' mean scores UG Degree in the Pre-test was **31.72%**, whereas their mean score of PG Degree in the Pre-test was **30.0%**. The mean difference was **1.72%**. The calculated *t* value was **0.03**, while the table value was **2.704**. Since the *t* value was significantly lower than the required table value, the hypothesis of the present study is accepted.
- The teachers' mean scores of UG Degree in the Post-test was **86.85%**, whereas their mean score of PG Degree in the Post-test was **87.57%**. The mean difference was **0.72%**. The calculated *t* value was **0.33**, while the table value was **2.704**. Since the *t* value was significantly lower than the required table value, the hypothesis of the present study is accepted.
- The teachers' mean scores of 1 to 3 ICT Training attended in the Pre-test was **30.05%**, whereas their mean score in the Post-test was **86.88%**. The mean difference was **56.83%**. The calculated *t* value was **7.42**, while the table value

was **2.636**. Since the *t* value was significantly higher than the required table value, the hypothesis of the present study is rejected.

- The teachers' mean scores of 4 to 5 ICT Training attended in the Pre-test was **29.05%**, whereas their mean score in the Post-test was **89.57%**. The mean difference was **60.52%**. The calculated *t* value was **1.49**, while the table value was **2.977**. Since the *t* value was significantly lower than the required table value, the hypothesis of the present study is accepted.
- The teachers' mean scores 1 to 3 ICT Training attended in the Pre-test was **30.05%**, whereas their mean score of 4 to 5 ICT Training attended in the Pre-test was **29.05%**. The mean difference was **1.0%**. The calculated *t* value was **0.28**, while the table value was **2.704**. Since the *t* value was significantly lower than the required table value, the hypothesis of the present study is accepted.
- The teachers' mean scores of UG Degree in the Post-test was **86.88%**, whereas their mean score of 4 to 5 ICT Training attended in the Post-test was **89.57%**. The mean difference was **2.69%**. The calculated *t* value was **0.38**, while the table value was **2.704**. Since the *t* value was significantly lower than the required table value, the hypothesis of the present study is accepted.
- Teachers from Harur Education District demonstrated greater interest in creating activities using the Educandy app compared to teachers from Dharmapuri Education District.
- The study revealed that teachers from Harur Education District were more actively engaged in designing activities through the Educandy app than those from Dharmapuri Education District.

5.3 Summary of the Major Findings and Discussion

The present study examined the effectiveness of the Educandy App in enhancing primary teachers' competency in developing interactive games for classroom transactions. The findings from the pre-test and post-test comparisons, t-test analyses, ANOVA results, and subgroup analyses clearly demonstrated the strong impact of the intervention. A substantial improvement was recorded in the overall performance of teachers after the training intervention. The pre-test mean score (31.7%) increased significantly to 85.9% in the post-test, yielding a mean difference of 54.2%. The t value (9.02) far exceeded the table value, confirming that the Educandy intervention significantly enhanced teachers' knowledge and skills. These findings strongly validated the effectiveness of digital game-based learning tools in teacher professional development. All four domains measured in the study showed remarkable progress from pre-test (30–33%) to post-test (86–91%). Each domain exhibited a **statistically significant t-value**, resulting in the rejection of the null hypothesis for all domains. ANOVA results, with **F-values ranging from 284.74 to 355.55**, indicated that the improvements were not due to chance but were consistently significant at **$p < 0.001$**. These results confirm that Educandy strengthened teachers' capabilities comprehensively across multiple skill areas. Correlation coefficients ($r = 0.65$ to 0.72) revealed a moderate to strong positive relationship, showing that although initial performance levels differed, all teachers benefitted significantly from the intervention. Teachers who scored higher in the pre-test also tended to perform well in the post-test, but even low scorers showed marked improvement. Within-group improvements in both districts were statistically significant. Between-group comparisons showed no significant difference in pre-test and post-test scores, indicating that the Educandy intervention was equally beneficial in both regions. However, qualitative observations

showed that Harur teachers displayed greater enthusiasm and involvement in creating Educandy activities, suggesting regional differences in motivation and technological readiness. Both male and female teachers showed significant improvements from pre-test to post-test, leading to the rejection of the null hypothesis for both groups. Between-group comparisons for both pre-test and post-test scores were statistically insignificant, showing that gender had no effect on training outcomes. Thus, the Educandy app was equally effective for male and female teachers. Teachers with up to 25 years of experience and those with more than 25 years showed significant gains in post-test scores. No significant difference was found between the groups in both pre-test and post-test comparisons, indicating that teaching experience did not influence the effectiveness of the intervention. The use of game-based learning tools proved beneficial for both younger and more experienced teachers. Both PUPS and PUMS teachers showed significant growth from pre-test to post-test. Differences between school types were not statistically significant, indicating that school type did not influence learning outcomes. Teachers with UG and PG degrees both recorded significant improvements. No significant difference between their pre-test and post-test scores suggests that academic qualification was not a determining factor in the effectiveness of the training. Teachers who attended 1–3 ICT trainings showed significant improvement. Teachers with 4–5 ICT trainings did not show statistically significant improvement in the t-test, suggesting that teachers with prior extensive ICT exposure already possessed stronger baseline skills. However, both groups benefitted from the intervention. The findings reveal that teachers effectively developed digital games, and gained confidence in using the Educandy app for classroom interactions. Teachers from Harur district demonstrated higher motivation and creative engagement, highlighting the importance of teacher enthusiasm and support.

Discussion

The findings align strongly with existing literature on digital game-based learning. The significant improvements across all domains confirm that interactive digital tools can substantially enhance teaching competencies. The Educandy app improved teachers' ability to design meaningful, engaging classroom activities, supporting earlier studies that emphasize the role of gamification in increasing motivation, participation, and instructional quality. Furthermore, the absence of significant differences among demographic groups—gender, school type, job experience, academic qualification—suggests that Educandy is universally applicable, offering equal benefits across teacher categories. The study also indicates that structured training, combined with user-friendly digital platforms, can overcome barriers related to technological anxiety or lack of experience. Overall, the research demonstrates that integrating digital game-based tools like Educandy into teacher training can profoundly enrich classroom transactions, making learning more interactive, effective, and learner-centered.

5.4 Recommendations based on the Findings of the Study

Based on the findings, the following recommendations are proposed:

- **Integrate Educandy into In-service Training:** Teacher training programs should adopt Educandy as part of their instructional toolkit.
- **Offer Periodic Refresher Courses:** Continuous professional development should include refresher sessions to sustain knowledge and skills gained.
- **Promote Equitable Access to Digital Tools:** Schools must ensure that all teachers have access to ICT resources to maximize the benefits of gamified learning.

- **Adopt Gamification in Educational Policy:** Policymakers should formally incorporate gamified approaches like Educandy into teacher capacity-building frameworks.
- **Encourage Peer Learning Communities:** Teachers should be encouraged to share Educandy-based resources and collaborate on interactive lesson design.
- Further research could be conducted to investigate the effectiveness of Educandy App in enhancing online learning experiences, including their impact on learner engagement, retention, and comprehension.
- Studies could examine how Educandy App can be effectively integrated into enhance learning outcomes and engagement.

These recommendations could provide valuable insights into the use of Educandy App in various contexts and their impact on teachers behaviour and learning outcomes.

5.5 Educational Implication of the Present Study

Following are the educational implication of the present study.

- The integration of **digital tools like the Educandy App** in teacher training significantly enhances professional competencies. This can help students to better comprehend and apply the information they are learning.
- The Educandy App provide easy access to additional learning, allowing learners to explore related subjects and gain a deeper understanding of the subject matter.
- Findings confirm that **interactive and gamified learning** can be universally effective, benefiting teachers regardless of gender, qualification, or teaching experience.

- The Educandy App encourages students to explore and discover new information independently. By using the Educandy App, students can follow their own learning path and pursue their own interests.
- **Scalability** is feasible since improvements were observed across diverse groups and education districts. The Educandy app can facilitate collaboration and knowledge sharing among learners by enabling them to share resources and build on each other's knowledge.
- Teacher education programs should adopt **technology-supported interventions** to modernize classroom practice.
- Continuous ICT-based professional development is vital to keep teachers updated with **innovative pedagogical strategies**.
- The Educandy App promotes collaborative learning by providing opportunities for students to share and access resources collectively, thereby supporting their overall learning process.
- The Educandy App fosters the development of students' critical thinking skills.

5.6 Suggestions for Further Researches

Here are some suggestions for further research related to Educandy App.

- Studies could conduct large-scale studies with more diverse teacher populations to generalize the findings.
- Research could include qualitative investigations to capture teachers' perceptions, challenges, and engagement with the app.
- Longitudinal studies should be conducted to assess knowledge retention over a longer duration.

- Further research could compare Educandy with other digital learning tools (AR/VR, AI-based apps and gamified LMS platforms) to assess relative effectiveness.
- Explore the role of student feedback in refining the use of Educandy in classroom contexts.
- Studies could investigate the Educandy App's influence on attention and distractibility in digital environments, as well as identify strategies to enhance teachers' engagement while minimizing distractions.
- Research could examine how the Educandy App is used in online collaboration, and how its design can support knowledge sharing and collaborative learning.

These suggestions could provide valuable insights into the role of the Educandy App in digital communication and learning, and how its design can be optimized to enhance teachers' engagement, comprehension, and collaboration.

Justification of the Study

The Educandy App serves as an effective digital tool to enhance teaching-learning practices, particularly in the primary school context. In Dharmapuri district, where many government primary and upper primary schools face challenges such as limited resources, high pupil–teacher ratios, and varying student engagement levels, the integration of interactive, game-based learning becomes highly relevant.

Firstly, Educandy provides simple, user-friendly features that allow teachers to design interactive activities such as quizzes, word searches, matching exercises, and spelling games without requiring advanced technical knowledge. This directly supports teachers in Dharmapuri, many of whom may not have prior exposure to advanced digital tools.

Secondly, the use of interactive digital applications like Educandy has been shown to improve student motivation and engagement. In rural and semi-urban contexts, where children often have limited exposure to digital learning, the novelty and play-based nature of Educandy can increase participation and reduce learning fatigue.

Thirdly, Educandy supports flexible curriculum integration. Teachers can customize activities according to the prescribed syllabus, making it adaptable for local learning needs while aligning with state education standards. This ensures that the tool is not just entertaining but also academically meaningful.

Finally, training primary teachers in Dharmapuri district to effectively use Educandy promotes capacity building and digital empowerment. By equipping teachers with innovative strategies, the intervention enhances both teaching practices and student learning outcomes. Given the increasing push towards Digital India initiatives and NEP 2020's emphasis on technology-enabled learning, adopting Educandy represents a practical step toward modernizing classrooms in the district.

5.7 Conclusion

The study demonstrated that interactive games developed through the Educandy App significantly improved primary teachers' classroom transaction skills. The intervention enhanced knowledge across all domains, promoted critical thinking, collaboration, and engagement, and proved effective across gender, qualification, and experience groups.

The findings highlight that Educandy is not only a tool for student-centered learning but also a powerful resource for teacher professional development. By bridging traditional pedagogy with digital innovation, the educandy app fosters active learning environments and equips teachers with essential 21st-century competencies.

The availability of smart boards and hi-tech laboratories in primary and middle schools ensured that there was no difficulty in implementing the Educandy app. Students actively engaged with the activities and demonstrated a high level of enthusiasm while participating.

The integration of the app assisted teachers in overcoming instructional challenges commonly faced during classroom teaching. When complex or abstract portions of the lesson were transformed into interactive activities through Educandy, students were able to comprehend the content more effectively.

Furthermore, the app's unique feature of converting a single activity into multiple types of interactive games enhanced its pedagogical utility, providing teachers with flexible and innovative methods to reinforce learning outcomes.

Therefore, the study strongly advocates the integration of game-based digital tools like Educandy App into teacher education frameworks, ensuring that teaching and learning processes are more engaging, inclusive and effective manner.

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https://doi.org/10.1021/acs.jchemed.7b0036 1

https://doi.org/10.19173/irrodl.v12i3.890

https://doi.org/10.1016/j.knosys.2018.04.02 5

https://doi.org/10.1088/1757 899X/306/1/012020

https://doi.org/10.1016/j.jii.2018.01.005

https://doi.org/10.1109/MNET.2018.170020 2

https://doi.org/10.1016/j.iheduc.2004.12.001

https://doi.org/10.1016/j.compag.2018.02.01 6

https://doi.org/10.1109/ACCESS.2019.2916 324

https://doi.org/10.3390/educsci10090216

(https://syamsulanam42.blogspot.com/2017/09/model-model-penelitianpengembangan.html).

APPENDICES

District Institute of Education and Training, Settikarai-636704

Dharmapuri District

Personal Blank of the Respondents

Name of the Researcher: Dr N. INDIRA

Designation: Lecturer

Official Address: DIET, Settikarai, Dharmapuri District

Contact No: 8883715713

Area of the specialization: Educational Technology

So far how many projects are done: 05

Some other project in collaboration with others: Yes

i) Samagara Siksha Abiyan, Krishnagiri

ii) Year: 2023 - 2024

iii)Title: Identifying New India Literacy Programme Learners in Krishnagiri District

Personal Blank of the Respondents

1. **Full Name:**_____
2. **Age** **:** Below-35/ Above-35
3. **Gender** **:** Male/Female
4. **Locality** **:** Rural/Urban
5. **Educational Qualification** **:**_____
6. **Occupation/Position** **:**_____
7. **School Type** **:** PUPS/PUMS
8. **Teaching Experience** **:** 0-10/11-20/Above-20
9. **ICT Training Attended** **:** 0-3/4-5

District Institute of Education and Training, Settikarai-636704

Dharmapuri District

Pre-Test & Post-Test Scores

S. NO	NAME OF THE TEACHERS	PRE-TEST (25 marks)	PRE-TEST (100 marks)	POST-TEST (25 marks)	POST-TEST (100 marks)
1.	Mr. Kesavan	08	32	23	92
2.	Mr. Suresh	09	36	19	76
3.	Mrs. T. Roja	03	12	19	76
4.	Mrs. Kalpana	07	28	18	72
5.	Mrs. Kamatchi	05	20	22	88
6.	Mrs. Sudha	09	36	19	76
7.	Mr. P. Jayapal	08	32	22	88
8.	Mr.V. Vinothkumar	09	36	23	92
9.	Mr. B. Arulnatham	04	16	24	96
10.	Mr. P. Tharasingh	09	28	18	72
11.	Mrs. V. Kalaiselvi	09	36	22	88
12.	Mrs. Preethi	08	28	23	92
13.	Mr. Krishna Kumar	09	36	22	88
14.	Mr. Prabhu	09	36	24	96
15.	Mrs. Ambika	04	16	18	72
16.	Mrs. Ushanandhini	08	32	23	92
17.	Mrs. K. Sumathi	08	32	24	96
18.	Mrs. M. Vimala	09	36	18	88
19.	Mr. V. Raja	09	36	21	84
20.	Mr. K. Karthick	07	28	24	96
21.	Mr. T. Prabhu	9	36	22	88

22.	Mr. Arivazhagan	8	32	21	84
23.	Mrs. Ramya	07	32	23	92
24.	Mrs. Violet Prema,	07	28	21	84
25.	Mrs. Sivamaalar	08	36	24	96
26.	Mr. Venkatachalam	06	24	20	82
27.	Mr. Arunasalam	09	36	22	86
28.	Mr. R. Kamaraj	08	32	24	96
29.	Mr. Sivasankar	09	36	19	76
30.	Mrs. Rupadevi	07	28	23	92
31.	Mr. Aadhimoolam	08	32	22	88
32.	Mr. Yogaraj	09	36	23	92
33.	Mrs. A. Visalatchi	07	28	21	84
34.	Mrs. N. Mala	08	32	18	72
35.	Mr. R. Elavarasan	09	36	24	96
36.	Mr. K. Suresh	07	28	23	92
37.	Mr. Rajasekar	08	32	21	84
38.	Mr. Tamizhalagan	07	28	23	92
39.	Mr. Stalin	08	32	24	96
40.	Mr. Selvaraj	07	32	23	92

Research Tools

Developing Interactive Games for Classroom Transactions

ஆய்வாளர்

முனைவர் ந. இந்திரா

விரிவுரையாளர்

மாவட்ட ஆசிரியர் கல்வி மற்றும் பயிற்சி நிறுவனம், செட்டிக்கரை - 636704.

அன்புடையீர்,

நான் மேற்கண்ட தலைப்பில் சென்னை மாநில கல்வியியல் ஆராய்ச்சி மற்றும் பயிற்சி இயக்ககம் செயல்முறைக்கிணங்க செயல்திட்ட ஆய்வு மேற்கொள்கிறேன். ஆகவே இவ்வினா பட்டியலில் அளித்துள்ள விவரங்கள் படித்து உங்களின் மேலான கருத்துகளை தெரிவிக்கவும். உங்கள் கருத்துகள் ஆய்வுக்காக மட்டும் எடுத்துக் கொள்ளப்பட்டு ரகசியமாக பாதுகாக்கப்படும் என்று உறுதி அளிக்கிறேன்.

இப்படிக்கு உண்மையுள்ள

முனைவர் ந. இந்திரா

சுய விவரம்

1. ஆசிரியர் பெயர்:
2. பதவி:
3. கல்வி தகுதி:
4. பள்ளி முகவரி:
5. ஒன்றியம் :
6. பள்ளி வகை:

PUPS	PUMS

7. பாலினம்:

ஆண்	பெண்

8. வயது:

Below-35	Above-35

9. பணி அனுபவம்:

0-10	11-20	Above-20

10. வாட்ஸ்அப் எண்:

11. Mail Id:

12. ICT training attended:

Not Attended	Attended

Developing Interactive Games for Classroom Transactions

Pilot Study

அன்புடையீர்,

கீழே கொடுக்கப்பட்டுள்ள அளவுகோலில் உள்ள வினாக்களை நன்கு படிக்கவும். ஒவ்வொரு வினாவிற்கும் 3 விருப்பங்கள் அளிக்கப்பட்டுள்ளன. இதில் எந்த விருப்பம் தங்களுடைய எண்ணங்களுக்கு பொருத்தமாக உள்ளது என்று நினைக்கிறீர்களோ அதில் டிக் (√) குறியிடவும்.

வினாப்பட்டியல்

வ. எண்	கூற்றுகள்	ஆம்	இல்லை
I.	**Easy Game Creation**		
1.	Educandy App - யை நேரடியாக download செய்ய முடியும்.		
2.	Educandy App ஒரு software ஆகும்.		
3.	Educandy App - யை web brower கொண்டு download செய்ய முடியாது.		
4.	Educandy App - யை login செய்யாமல் நேரடியாக interactive games உருவாக்க முடியும்.		
5.	Educandy App உருவாக்க Register செய்ய தேவையில்லை.		
6.	Educandy App user friendly - யாக உள்ளது.		
7.	Educandy App - யை offline னிலும் பயன்படுத்தலாம்.		
8.	Educandy App - யை online - ல் மட்டுமே பயன்படுத்த முடியும்.		
9.	My acivities icon - ல் சென்று தான் interactive games உருவாக்க முடியும்.		
10.	Educandy App ஒரு web-based platform ஆகும்.		
II.	**Multiple Game Types**		
11.	Educandy App - ல் உள்ள செயல்பாடுகளின் எண்ணிக்கை பற்றி தெரியுமா?		
12.	Educandy App - ல் அனைத்து பாடங்களுக்கும் interactive games உருவாக்க முடியாது.		

13.	Create a list of words icon - ல் சென்று interactive games உருவாக்க முடியாது.		
14.	Pop-up box - ல் word என்ற இடத்தில் நாம் உருவாக்கும் interactive games -ன் தலைப்பு type செய்ய முடியும்.		
15.	Pop-up box - ல் current words என்ற இடத்தில் நாம் உருவாக்கும் interactive games -ன் பாடத் தலைப்பு type செய்ய முடியும்.		
16.	நாம் உருவாக்கிய interactive games - யை my acivities - ல் சென்று பார்க்க முடியும்.		
17.	Pen icon அனைத்து செயல்பாடுகளுக்கும் பயன்படுத்த முடியும்.		
18.	Educandy free App - ல் images - யை பயன்படுத்த முடியுமா?		
19.	Educandy free App - ல் sounds - யை பயன்படுத்த முடியாது.		
20.	Educandy App - ல் உருவாக்கிய interactive games - யை share செய்யாமல் விளையாட முடியும்.		
III.	**Concept Reinforcement**		
21.	Anagrams game - யை அனைத்து பாடத்திற்கும் பயன்படுகிறது.		
22.	Video - வை Educandy free App - ல் பயன்படுத்த முடியும்.		
23.	Word search game கணக்கு பாடத்திற்கும் பயன்படுத்த முடியும்.		
24.	மாணவர்களின் நினைவாற்றல் திறனை அதிகரிக்க memory game பயன்படுகிறது.		
25.	விநாடிவினா கேள்விகள் உருவாக்க match it மற்றும் match - up game பயன்படுகிறது.		
26.	Educandy App - ல் உருவாக்கிய செயல்பாடுகளை my account icon - ல் சென்று பார்க்க முடியும்.		
27.	Educandy App - ல் ஒரு game - யை உருவாக்கி அதனை பல்வேறு game - களில் தொடர்பு படுத்தி விளையாட முடியும்.		
28.	ஒன்றுக்கு மேற்பட்ட வார்த்தைகளை current words		

	என்ற icon - னை click செய்து சேர்க்க வேண்டும்.		
29.	Pop-up box - ன் வலது பக்கத்தில் currentwords என்று இருக்கும். அந்த வார்த்தையை பல்வேறு செயல்பாடுகளுக்கு பயன்படுத்த முடியும்.		
30.	நாம் உருவாக்கிய interactive games - யை மற்றவர்கள் விளையாட share என்ற icon -னை பயன்படுத்த வேண்டும்.		
IV.	**Collaborative Learning**		
31.	Spell it game மொழி பாடத்திற்கு மட்டும் பயன்படுத்தலாம்.		
32.	கூர்சிந்தனையை அதிகரிக்க உதவும் செயல்பாடுகள் பற்றி தெரியுமா?		
33.	Noughts and Crosses game விமர்சன சிந்தனையை அதிகரிக்க உதவுகிறது.		
34.	Match-up game எவ்வகையான சிந்தனையை அதிகரிக்க உதவுகிறது.		
35.	Educandy App - ல் உள்ள அனைத்து games - ம் படைப்பாற்றல் திறனை அதிகரிக்க உதவும்.		
36.	Cross Words செயல்பாடு கணக்கு பாடத்திற்கு பயன்படுத்த முடியாது.		
37.	Multiple Choice செயல்பாடு பொது அறிவு வினாக்கள் உருவாக்க பயன்படுகிறது.		
38.	Match-up செயல்பாடு தமிழ் பாடத்தின் கடின பகுதியை மாணவர்களுக்கு எளிதாக புரிய வைக்க உதவுகிறது.		
39.	Embed என்ற icon ஒரு தகவல் துணுக்கு குறியீடு ஆகும்.		
40.	Embed option - ல் உள்ள link - கை click செய்து மற்றவருக்கு share செய்தால் அவர்கள் அந்த link - கை பயன்படுத்தி விளையாடலாம்.		

Developing Interactive Games for Classroom Transactions

<u>ஆய்வாளர்</u>

முனைவர் ந. இந்திரா

விரிவுரையாளர்

மாவட்ட ஆசிரியர் கல்வி மற்றும் பயிற்சி நிறுவனம், செட்டிக்கரை - 636704.

அன்புடையீர்,

நான் மேற்கண்ட தலைப்பில் சென்னை மாநில கல்வியியல் ஆராய்ச்சி மற்றும் பயிற்சி இயக்ககம் செயல்முறைக்கிணங்க செயல்திட்ட ஆய்வு மேற்கொள்கிறேன். ஆகவே இவ்வினா பட்டியலில் அளித்துள்ள விவரங்கள் படித்து உங்களின் மேலான கருத்துகளை தெரிவிக்கவும். உங்கள் கருத்துகள் ஆய்வுக்காக மட்டும் எடுத்துக் கொள்ளப்பட்டு ரகசியமாக பாதுகாக்கப்படும் என்று உறுதி அளிக்கிறேன்.

இப்படிக்கு உண்மையுள்ள

முனைவர் ந. இந்திரா

சுய விவரம்

1. ஆசிரியர் பெயர்:

2. பதவி:

3. கல்வி தகுதி:

5. பள்ளி முகவரி:

6. ஒன்றியம் :

7. பள்ளி வகை:

PUPS	PUMS

8. பாலினம்:

ஆண்	பெண்

9. வயது:

Below-35	Above-35

10. பணி அனுபவம்:

1-25	Above-25

10. வாட்ஸ்அப் எண்:

11. Mail Id:

12. ICT training attended:

0-3	4-5

Developing Interactive Games for Classroom Transactions
Pre-Test/Post-Test

அன்புடையீர்,

கீழே கொடுக்கப்பட்டுள்ள அளவுகோலில் உள்ள வினாக்களை நன்கு படிக்கவும். ஒவ்வொரு வினாவிற்கும் 2 விருப்பங்கள் அளிக்கப்பட்டுள்ளன. இதில் எந்த விருப்பம் தங்களுடைய எண்ணங்களுக்கு பொருத்தமாக உள்ளது என்று நினைக்கிறீர்களோ அதில் டிக் (√) குறியிடவும்.

வினாப்பட்டியல்

வ. எண்	கூற்றுகள்	ஆம்	இல்லை
I.	**Easy Game Creation**		
1.	Educandy App - யை நேரடியாக download செய்ய முடியும்.		
2.	Educandy App ஒரு software ஆகும்.		
3.	Educandy App - யை login செய்யாமல் நேரடியாக interactive games உருவாக்க முடியும்.		
4.	Educandy App user friendly - யாக உள்ளது.		
5.	Educandy App - யை offline னிலும் பயன்படுத்தலாம்.		
6.	My acivities icon - ல் சென்று தான் interactive games உருவாக்க முடியும்.		
7	Educandy App ஒரு web-based platform ஆகும்.		
II.	**Multiple Game Types**		
8.	Educandy App - ல் அனைத்து பாடங்களுக்கும் interactive games உருவாக்க முடியாது.		
9.	Pop-up box - ல் word என்ற இடத்தில் நாம் உருவாக்கும் interactive games -ன் தலைப்பு type செய்ய முடியும்.		

10.	நாம் உருவாக்கிய interactive games - யை my acivities - ல் சென்று பார்க்க முடியும்.		
11.	Pen icon அனைத்து செயல்பாடுகளுக்கும் பயன்படுத்த முடியும்.		
12.	Educandy free App - ல் images - யை பயன்படுத்த முடியுமா?		
13.	Educandy App - ல் உருவாக்கிய interactive games - யை share செய்யாமல் விளையாட முடியும்.		
III.	**Concept Reinforcement**		
14.	Anagrams game - யை அனைத்து பாடத்திற்கும் பயன்படுகிறது.		
15.	மாணவர்களின் நினைவாற்றல் திறனை அதிகரிக்க memory game பயன்படுகிறது.		
16.	விநாடிவினா கேள்விகள் உருவாக்க match it மற்றும் match - up game பயன்படுகிறது.		
17.	Educandy App - ல் ஒரு game - யை உருவாக்கி அதனை பல்வேறு game - களில் தொடர்பு படுத்தி விளையாட முடியும்.		
18.	ஒன்றுக்கு மேற்பட்ட வார்த்தைகளை current words என்ற icon - னை click செய்து சேர்க்க வேண்டும்.		
19.	நாம் உருவாக்கிய interactive games - யை மற்றவர்கள் விளையாட share என்ற icon -னை பயன்படுத்த வேண்டும்.		
IV.	**Collaborative Learning**		
20.	கூர்சிந்தனையை அதிகரிக்க உதவும் செயல்பாடுகள் பற்றி தெரியுமா?		
21.	Noughts and Crosses game விமர்சன சிந்தனையை அதிகரிக்க உதவுகிறது.		
22.	Educandy App - ல் உள்ள அனைத்து games - ம் படைப்பாற்றல் திறனை அதிகரிக்க உதவும்.		
23.	Multiple Choice செயல்பாடு பொது அறிவு வினாக்கள்		

	உருவாக்க பயன்படுகிறது.		
24.	Match-up செயல்பாடு தமிழ் பாடத்தின் கடின பகுதியை மாணவர்களுக்கு எளிதாக புரிய வைக்க உதவுகிறது.		
25.	Embed option - ல் உள்ள link - கை click செய்து மற்றவருக்கு share செய்தால் அவர்கள் அந்த link - கை பயன்படுத்தி விளையாடலாம்.		

Interventional Materials

Interactive Games in Classroom Transactions

ஆசிரியர் கையேடு

செயல் திட்ட ஆராய்ச்சி

மாவட்ட ஆசிரியர் கல்வி மற்றும் பயிற்சி நிறுவனம்

செட்டிக்கரை-636704 தருமபுரி மாவட்டம்

பயிற்சி கட்டகம் உருவாக்கம்

தலைவர்

முனைவர் பெகோவிந்த பிரகாஷ் .

முதல்வர்

மாவட்ட ஆசிரியர் கல்வி மற்றும் பயிற்சி நிறுவனம்

செட்டிக்கரை-636704, தருமபுரி மாவட்டம்

தயாரிப்பு

ஆராய்ச்சியாளர்

முனைவர் ந.இந்திரா ., M.Com., M.P.Ed., M.Phil., B.Ed., M.Sc, Ph.D

விரிவுரையாளர்

மாவட்ட ஆசிரியர் கல்வி மற்றும் பயிற்சி நிறுவனம்

செட்டிக்கரை-636704, தருமபுரி மாவட்டம

என்னுரை

Educandy App ஒரு வேடிக்கையான மற்றும் ஊடாடும் கற்றல் பயன்பாடு ஆகும்இந்த . செயலிமாணவர்களை ஈர்க்கக்கூடிய கற்றல் செயல்பாடுகளை உருவாக்க உதவும் ஒரு புதுமையான கல்வி பயன்பாடாகும். கற்றலை மேலும் ஊடாடும் வகையில் வடிவமைக்கப்பட்ட Educandy App. ஆசிரியர்கள் வினாடி வினாக்கள், வார்த்தை விளையாட்டுகள் மற்றும் பிற வேடிக்கையான பயிற்சிகளை எளிதாக உருவாக்க உதவுகிறது .மேலும் இந்த தளம் தானாகவே அதை மாணவர்கள் கணினிகள், டேப்லெட்டுகள் அல்லது ஸ்மார்ட்போன்களில் விளையாடக்கூடிய ஊடாடும் விளையாட்டுகளாக மாற்றுகிறது.

Educandy App -ன் முக்கிய அம்சங்களில் ஒன்று அதன் எளிமை ஆகும் .Educandy செயலியைப் பயன்படுத்த ஆசிரியர்களுக்கு மேம்பட்ட தொழில் நுட்ப திறன்கள் தேவையில்லை. சொற்கள், கேள்விகள் அல்லது பொருந்தக்கூடிய ஜோடிகளை உள்ளிடுவதன் மூலம் அனகிராம்கள், சொல் தேடல்கள் மற்றும் நினைவக விளையாட்டுகள் போன்ற விளையாட்டுகளை உருவாக்குகிறது. இந்த செயல்பாடுகள் கற்றலை சுவாரஸ்யமாக்குகின்றன மற்றும் அறிவை ஈர்க்கும் வகையில் வலுப்படுத்துகின்றன.

Educandy செயலி மொழி கற்றல், சொல்லகராதி உருவாக்கம் மற்றும் பாட திருத்தத்திற்கு ஏற்றவாறு அமைந்துள்ளது. இது பல்வேறு விளையாட்டு வடிவங்களை கொண்டுள்ளது .வேடிக்கையான மற்றும் மன அழுத்தமில்லாத சூழலில் பயிற்சி செய்ய அனுமதிக்கிறது. கூடுதலாக, மாணவர்கள் எந்த நேரத்திலும் எந்த இடத்திலும் விளையாட்டுகளை விளையாட உதவுவதன் மூலம் இது சுய கற்றலை ஊக்குவிக்கிறது.

Educandy செயலியின் மற்றொரு நன்மை அதன் நெகிழ்வுத்தன்மை. ஆசிரியர்கள் வெவ்வேறு கற்றல் நிலைகள் மற்றும் பாடங்களுக்கு ஏற்றவாறு தனித்தனியாக செயல்பாடுகளை உருவாக்க முடியும். மேலும், மாணவர்கள் பலதரப்பட்ட முறைகளில் போட்டியிடவோ அல்லது கற்றலை மேம்படுத்தவோ முடியும் என்பதால், இந்த செயலி சிறப்பான ஒத்துழைப்பை அளிக்கிறது.

நவீன வகுப்பறைகளுக்கு Educandy செயலி ஒரு சிறப்புமிக்க கருவியாகும், இது கற்றலை ஊடாடும் மற்றும் சுவாரஸ்யமாக்குகிறது. கல்வியுடன் தொழில்நுட்பத்தை இணைப்பதன் மூலம், மாணவர் ஈடுபாட்டையும் ஊக்கத்தையும் மேம்படுத்துகிறது, பாடங்களை மிகவும் பயனுள்ளதாகவும் மறக்கமுடியாததாகவும் மாற்றுகிறது. இக்கட்டகம் எளிய நடையில் உருவாக்கப்பட்டுள்ளது .

எனவே இக்கட்டகத்தில் உள்ள செயல்பாடுகளை நடைமுறைப்படுத்தினால் மாணவர்களின் பல்வேறு திறன்களை வெளிக்கொணரவும்செயல்படுத்தவும் அவர்களை , ஊக்கப்படுத்தவும் உதவும் என்பதில் ஐயமில்லை. கற்றல், கற்பித்தலின் போது வகுப்பறையில் .பயன்படுத்தும்படி அன்புடன் கேட்டுக்கொள்கிறேன்

முனைவர் ந இந்திரா .

ஆராய்ச்சியாளர்

அணிந்துரை

முனைவர் பெகோவிந்த பிரகாஷ் .

முதல்வர் ,மாவட்ட ஆசிரியர் கல்வி மற்றும் பயிற்சி நிறுவனம் ,செட்டிக்கரை

தருமபுரி மாவட்டம்

ஒருமைக்கண் தான்கற்ற கல்வி ஒருவர்க்கு

எழுமையும் ஏமாப் புடைத்து. - குறள்

மாணவர்களின் கற்றல் கற்பித்தல் நிகழ்வுகளில் புதிய அணுகுமுறைகளை உட்புகுத்தி கற்றல் திறனை மேம்படுத்த துணை புரிவதே தொழில்நுட்ப செயலிகள் ஆகும். தொழில்நுட்ப செயலியைப் பயன்படுத்தி ஆசிரியர் தாங்கள் இருக்கும் இடத்திலிருந்து ஒரு பாடப் பொருளை உருவாக்கி அதனை தொழில்நுட்ப செயலிகள் மூலம் மாணவர்களுக்குப் பகிர்ந்து அவர்கள் இருக்கும் இடத்திலிருந்து அந்தப் பாடப்பொருளைப் படித்து புரிந்து கற்க துணைப்புரிகிறது. அவ்வாறு பயன்படும் செயலிகளில் ஒன்று .Educandy App ஆகும்

Word Search, Spell It, Anagrams, Crossword, Match-up, Memory Game, Multiple Choice, Noughts & Crosses போன்ற செயல்பாடுகளை இத்தொழில்நுட்ப செயலியைப் பயன்படுத்தி தொடக்கக் கல்விப் பயிலும் குழந்தைகளுக்கு தமிழ், ஆங்கிலம், கணக்கு, அறிவியல் மற்றும் சமூக அறிவியல் பாடங்களில் கடினமான பகுதியை எளிதாக புரிந்து கொள்ளவும், செய்முறை வழியாக செய்து பார்க்கவும், கற்றல் கற்பித்தல் செயல்பாடுகளை வடிவமைக்கவும், மதிப்பீடு செய்யவும் Educandy செயலி உதவியாக உள்ளது.

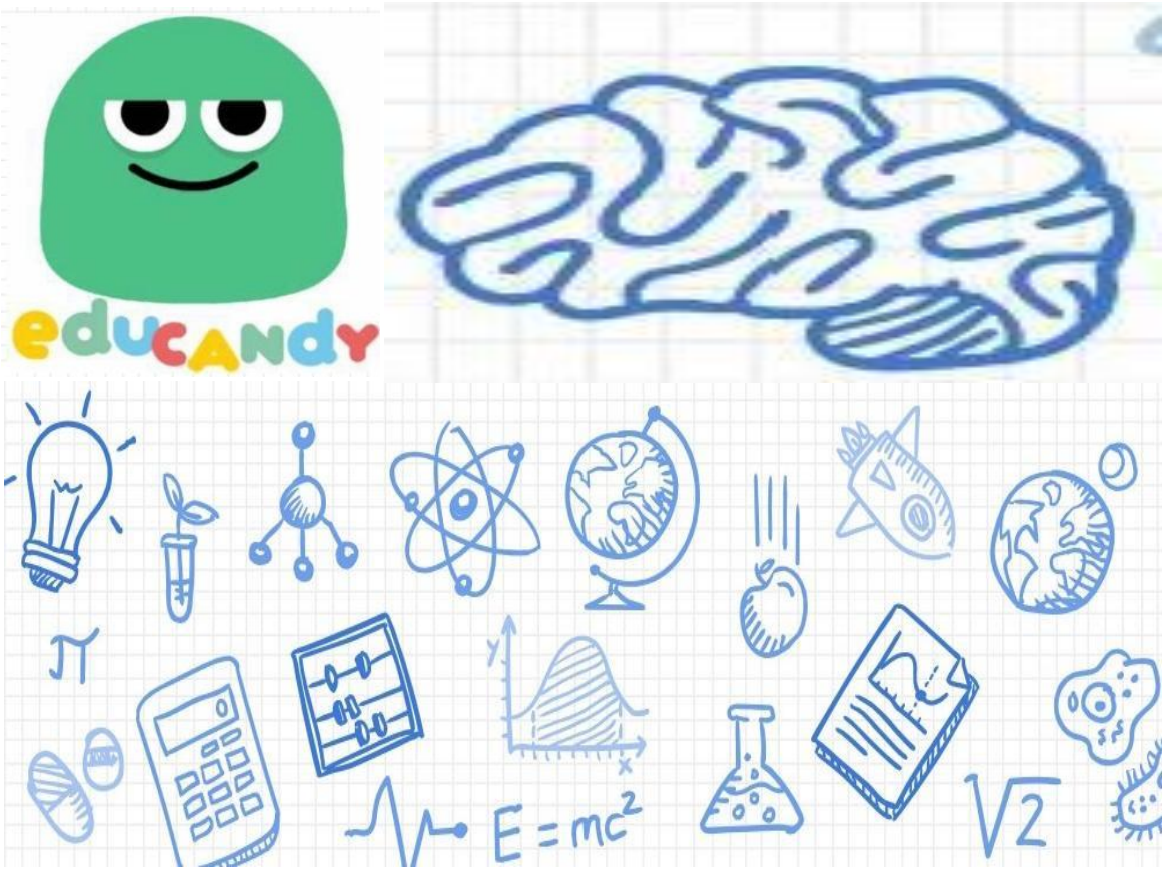
கல்வி மீதான தீவிர ஈடுபாடு, சுயதேடல், பகுத்தறிதல், தன் திறனைத் தானே தெரிந்து கொள்ளுதல், மேம்படுத்துதல் போன்ற திறன்கள் மட்டுமல்லாது கற்றல் அனுபவம் பெறல் என்னும் உயர்திறனைப் பெறவுள்ள ஆசிரியர்களுக்கு Educandy App சிறந்த வழிகாட்டியாகவும் ,அனைத்து பாடத்திற்கும் இந்தச் - Educandy Appயை பயன்படுத்தவும் கசடறக் கற்பதற்கு வழிகாட்டியாக Educandy Appஇருக்கும் என்பதில் ஐயமில்லை. இத்தகைய Educandy செயலி வழிக் கற்றலை நமது தொடக்க வகுப்பு மாணவர்கள் பயன்படுத்தி சிறப்புறும் வகையில் ஆசிரியர்களுக்கான கையேடு மாவட்ட ஆசிரியர் கல்வி மற்றும் பயிற்சி நிறுவனத்தின் விரிவுரையாளர் முனைவர் நஇந்திரா . மற்றும் வல்லுநர்கள் குழுவினால் உருவாக்கப்பட்டுள்ளது.

இவ்வழியில் மேலும், பல - Interactive Gamesகளை படைக்கவும், செயல்படுத்தவும், ஆர்வமுடைய மாணவர்களை உருவாக்க ஆசிரியகளுக்கு மேலும் பல்வேறு வழிகாட்டும் நூல்களை படைக்க இந்நூலாசிரியரை வாழ்த்துகிறேன்.

பொருளடக்கம்

Interactive Educational games using Educandy

"ஒரு விளையாட்டு என்பது நமது ஆற்றலை, இடைவிடாத நம்பிக்கையுடன், நாம் சிறந்து விளங்கும் ஒரு விஷயத்தில் கவனம் செலுத்தி, அதை அனுபவிக்க ஒரு வாய்ப்பாகும். வேறு வார்த்தைகளில் கூறுவதானால், விளையாட்டு என்பது மனச்சோர்வுக்கு நேரடியான எதிர்மாறாகும்." - **ஜேன் மெக் கோனிகல்**



Mobile Apps in Educational Usage

நவீன கல்வியில், ஊடாடும் மற்றும் அணுகக்கூடிய கற்றல் அனுபவங்களை வழங்குவதன் மூலம் மொபைல் செயல்பாடுகள் முக்கிய பங்கு வகிக்கின்றது. அவை தனிப்பயனாக்கப்பட்ட கற்றல் வழிமுறைகளை வழங்குகின்றது, மாணவர்கள் தங்கள் சொந்த வேகத்தில் கற்றுக்கொள்ள உதவுகின்றது. Duolingo, Khan Academy, and Google Classroom போன்றவை மொழித் திறன்கள், பாடப் புரிதல் மற்றும் வகுப்பறை மேலாண்மை ஆகியவற்றை மேம்படுத்துகின்றது. Gamification in educational apps ஈடுபாட்டை அதிகரிக்கிறது, கற்றலை வேடிக்கையாகவும் பயனுள்ளதாகவும் மாற்றுகிறது. கூடுதலாக, மொபைல் பயன்பாடுகள் தொலைதூரக் கற்றலை எளிதாக்குகின்றது. மாணவர்கள் எந்த நேரத்திலும், எந்த இடத்திலும் வளங்களை அணுக அனுமதிக்கிறது. AI-driven tutoring, real-time assessments, and multimedia integration மூலம் கல்வி செயல்பாடுகள் பல்வேறு கற்றல் பணிகளை வழங்குகின்றது.

E-Learning Platforms - Coursera மற்றும் Udemy போன்ற பயன்பாடுகள் பல்வேறு பாடங்களில் ஆன்லைன் படிப்புகளை வழங்குகின்றது.

Language Learning Apps - Duolingo, Babbel மற்றும் Rosetta Stone புதிய மொழிகளை பயன்படுத்துபவர்கள் ஊடாடும் வகையில் கற்றுக்கொள்ள உதவுகின்றது.

Classroom Management Apps - Google Classroom மற்றும் Edmodo ஆகியவை பாடங்கள், பணிகள் மற்றும் தகவல்தொடர்புகளை ஒழுங்கமைப்பதில் ஆசிரியர்களுக்கு உதவுகின்றது.

STEM Learning Apps - கான் அகாடமி, பிரில்லியண்ட் மற்றும் போட்டோமேத் போன்ற பயன்பாடுகள் அறிவியல், தொழில்நுட்பம், பொறியியல் மற்றும் கணித பாடங்களில் முக்கியத்துவம் செலுத்துகின்றது.

Early Childhood Education Apps - ABC mouse மற்றும் Endless Alphabet ஆகியவை பள்ளி குழந்தைகளுக்கு அடிப்படை கற்றலை வழங்குகின்றது.

Educational games and Apps - Kahoot! மற்றும் Quizlet ஆகியவை வினாடி வினாக்கள் மற்றும் ஊடாடும் சவால்கள் மூலம் கற்றலை ஈடுபாட்டுடன் மாற்றுகிறது .

Coding & Programming Apps - Grasshopper மற்றும் SoloLearn ஆகியவை ஊடாடும் முறையில் குறியீட்டைக் கற்பிக்கின்றது.

மேற்கண்ட கைபேசி செயலிகள் மாணவர்களின் கற்றலுக்கு பல்வேறு வகைகளில் உதவுகின்றது ஆனால் .Educandy App மாணவர்களின் கற்றலுக்கு உதவுவதோடு அவற்றை மதிப்பீடு செய்யவும் , ஆசிரியர்களுக்கு அனைத்து பாடங்களுக்கும் பல்வேறு செயல்பாடுகளை .உருவாக்கவும் உதவி புரிகிறது

EDUCANDY APP அறிமுகம்

✧ இது ஒரு application and educational software ஆகும் . Interactive games உருவாக்க பயன்படும் ஒரு வலைதளம் ஆகும்.

✧ இவ்வலைதளத்தைப் பயன்படுத்தி நமக்குத் தேவையான செயல்பாடுகளை எளிதில் உருவாக்க இயலும்.

நோக்கங்கள்

- ஆசிரியர்கள் தங்களுக்குத் தேவையான Interactive games - களை தாங்களே உருவாக்கிக்கொள்ள பயிற்சியளித்தல்.
- தாங்கள் தயாரித்த Interactive games - களை வகுப்பறைச் சூழலில் பயன்படுத்துவதற்கு பயிற்சி அளித்தல்.
- - Educandy App ல் உள்ள சிறப்பம்சம்களை எவ்வாறு பயன்படுத்த வேண்டுமென்று ஆசிரியர்களுக்கு பயிற்சியளித்தல்.

சிறப்பம்சங்கள்

- ஆசிரியர்கள் - Educandy App Studio வை பதிவிறக்கம் செய்யவேண்டும்.
- மாணவர்கள்- Educandy App Play வை பதிவிறக்கம் செய்யவேண்டும்.
- நமக்குத் தேவையான Interactive games - களை மிக மிக எளிதாக உருவாக்க இயலும்.
- Interactive games - களை தாங்களே உருவாக்குவதற்கு C++, Java போன்ற நிரலாக்க மொழிகள் (Programming languages) தெரிந்து இருக்க வேண்டிய அவசியமில்லை.
- இதில் கொடுக்கப்பட்டுள்ள codingகை - பயன்படுத்தி நமக்குத் தேவையான செயல்பாடுகளை மிக எளிதாக உருவாக்கலாம்.
- அனைத்து பாடங்களுக்கும் பல்வேறு செயல்பாடுகளை உருவாக்கலாம்.

- - Educandy Appல் 20 செயல்பாடுகள் உருவாக்க முடியும்.
- - Educandy Appல் 20 செயல்பாடுகளையும் மாணவர்கள் பயிற்சி செய்து முடித்தவுடன் அதனை நீக்கி விட்டு ,புதிதாக வேறு செயல்பாடுகளை உருவாக்கிக் கொள்ளும் சிறப்பம்சம் இதில் உள்ளது.
- ஆசிரியர் உருவாக்கும் ஒரு செயல்பாட்டை Educandy App நான்குஅல்லது ஐந்து - Interactive Games களாக மாற்றிக் கொடுக்கும் சிறப்பம்சம் இதில் உள்ளது.
- மாணவர்கள் ஆர்வமாகவும்கடினப் , பகுதியை எளிமையாகவும் கற்றுக்கொள்ளEducandy App உதவியாக இருக்கும் .
- தொடக்கநிலைஉயர்தொடக் ,கநிலைமற்றும் மேல்நிலைப்பள்ளி , .மாணவர்களும் பயன்படுத்தும் வகையில் உள்ளது
- மாணவர்கள் கையாள்வது எளிது.
- இந்த தளம் தானாகவே அதை மாணவர்களின் கணினிகள், டேப்லெட்டுகள் ,ஸ்மார்ட் போர்டுகள் லேப்டாப்கள் மற்றும் , ஸ்மார்ட்போன்களில் விளையாடக்கூடிய ஊடாடும் விளையாட்டுகளாக மாற்றி தருகிறது.
- - Educandy Appயை பதிவிறக்கம் செய்யாமல் லிங்க்கை பயன்படுத்தியும் ,குறியீட்டு நம்பரை பயன்படுத்தியும் விளையாடலாம்.

- – Blogs சிலும் லிங்க்கை பயன்படுத்தி விளையாடலாம்.
- Google வளைதளத்திற்கு சென்று Educandy App என்று தட்டச்சு செய்து அதனைopen செய்து Educandy App குறியீட்டு நம்பரை பயன்படுத்தியும் விளையாடலாம் .

வரம்புகள்

- Online ல் மட்டுமே உருவாக்க இயலும்.
- Offline ல் உருவாக்க இயலாது.
- தேவையான இணைய வசதி இருக்க வேண்டும்.
- இணைய வசதி இருந்தால் மட்டுமே விளையாட முடியும்.

Educandy App

ஓர் பார்வை

Educandy App என்பது ஆசிரியர்கள் மாணவர்களுக்கு ஊடாடும் கல்வி விளையாட்டுகளை (Interactive Educational Games) உருவாக்க அனுமதிக்கும் ஒரு தளமாகும். இது கற்றலை வேடிக்கையாகவும், ஈடுபாட்டுடனும் மாற்ற உதவும் பல்வேறு வகையான விளையாட்டுகளை இந்த தளம் வழங்குகிறது. மாணவர்கள் எந்த சாதனத்திலும் (Mobile, Computer, Smartboard, Laptop) ஒரு தனித்துவமான குறியீட்டைப் பயன்படுத்தியும், லிங்க்கை பயன்படுத்தியும் இந்த விளையாட்டுகளை விளையாடலாம். இது கற்றலை மேலும் சுவாரஸ்யமாக்குகிறது. Educandy free App - ல் எட்டு வகையான விளையாட்டுகள் உள்ளது. இவ்விளையாட்டுக்களை பயன்படுத்தி தொடக்கப்பள்ளி ஆசிரியர்கள் தமிழ், ஆங்கிலம், கணக்கு, அறிவியல் மற்றும் சமூக அறிவியல் ஆகிய

பாடங்களுக்கு செயல்பாடுகளை உருவாக்கி, அவற்றை மாணவர்களுக்கு பகிர்ந்து (share) விளையாட வைக்கலாம். இவ்விளையாட்டின் மூலம் மாணவர்களின் கற்றலை எளிமையாகவும், மகிழ்ச்சியாகவும் மாற்றலாம். கருத்துக்களை வலுப்படுத்த தொடக்கப்பள்ளி ஆசிரியர்களுக்கு மிகவும் பயனுள்ளதாக இருக்கும். இது வகுப்பறை ஈடுபாட்டை மேம்படுத்துகிறது மற்றும் கேமிபிகேஷன் மூலம் செயலில் கற்றலை ஊக்குவிக்கிறது.

கிழே கொடுக்கப்பட்டுள்ள செயல்பாடுகள் இச்செயலியை பயன்படுத்தி கற்ப்பிக்க இயலும்.

- Word Search
- Spell It
- Anagrams
- Crossword
- Match - up
- Memory Game
- Multiple Choice
- Noughts & Crosses

Word Search சொல்) தேடல்

ஒரு கட்டத்தில் பல்வேறு வகையான சொற்கள் மறைந்திருக்கும். அவ்வாறு மறைக்கப்பட்ட சொற்களைக் கண்டறிய இந்த சொல் தேடல் விளையாட்டு உதவுகிறது இந்த .சொல் தேடல் விளையாட்டு தமிழ் ,ஆங்கிலம்,அறிவியல் மற்றும் சமூக அறிவியல் பாடங்களுக்கும் பயன்படுத்தலாம் .சொல் தேடல் விளையாட்டு மூலம் மாணவர்கள் புதிய சொற்களை கண்டறியும் திறனை வளர்த்துக் கொள்ள உதவுகிறது.

Spell it (சொற்களை உருவாக்குதல்)

பல்வேறு எழுத்துக்கள் கொடுக்கப்பட்டிருக்கும் அந்த எழுத்துகளிலிருந்து சரியான சொற்களை உருவாக்க வேண்டும் இந்த . விளையாட்டு மாணவர்களின் சிந்தனை திறனை வளர்க்க உதவுகிறது. சொற்களைஉருவாக்குதல் விளையாட்டை தமிழ் மற்றும் ஆங்கில பாடத்திற்கு பயன்படுத்தலாம் .

Anagrams(அனகிராம்கள்)

சரியான வார்த்தையை உருவாக்கவும் ,எழுத்துக்களை மறுசீரமைக்கவும் இந்த விளையாட்டு உதவுகிறது. குறிப்பாக இந்த விளையாட்டு ஆங்கில பாடத்திற்கு பயன்படுத்தும் பொழுது மாணவர்கள் அதிக சொற்களை படிக்கவும் ,உருவாக்கவும் அறிந்துகொள்ளவும் , உதவியாக இருக்கும் இந்த .விளையாட்டு மூலம் மாணவர்களின் நேர மேலாண்மை திறன் மற்றும் சிந்திக்கும் திறன் அதிகரிக்கும் .

Crossword(குறுக்கெழுத்து)

குறுக்கெழுத்து புதிர்கள் ஆகும்குறுக்கெழுத்தை . கண்டுபிடிக்க பல்வேறு புதிர்கள் கொடுக்கப்பட்டிருக்கும் .இந்த விளையாட்டில் பல்வேறு எழுத்துக்கள் கொடுக்கப்பட்டிருக்கும் அந்த எழுத்துகளிலிருந்து சரியான சொற்களை சரியான வரிசையில் கண்டுபிடிக்க வேண்டும்குறுக்கெழுத்து . விளையாட்டு மூலம் மாணவர்களின்நேர மேலாண்மை திறன் , கூர்சிந்தனை திறன், படைப்பாற்றல் திறன்மற்றும் சிந்திக்கும் திறன் அதிகரிக்கும் .இவ்விளையாட்டை அனைத்து பாடத்திற்கும் பயன்படுத்தலாம்.

Match) up – பொருத்தும் விளையாட்டு(

சொற்களுக்கு பொருத்தமான ஜோடிகளை Drag செய்துஇணைக்க வேண்டும் இந்த .விளையாட்டில் வார்த்தைகள், படங்கள் அல்லது வரையறைகளையும் பொருத்தலாம். இவ்விளையாட்டை அனைத்து பாடத்திற்கும் பயன்படுத்தலாம் இந்த .விளையாட்டு மூலம் மாணவர்களின் நேர மேலாண்மை திறன் கூர்சிந்தனை திறன், படைப்பாற்றல் திறன் , மற்றும் சிந்திக்கும் திறன் அதிகரிக்கும்.

Memory Game நினைவக) விளையாட்டு(

பொருந்தக்கூடிய ஜோடிகளைக் கண்டறிய அட்டைகளை புரட்ட வேண்டும். இவ்விளையாட்டை அனைத்து பாடத்திற்கும் பயன்படுத்தலாம் . இந்தவிளையாட்டு மூலம் மாணவர்களின் நேர மேலாண்மை திறன் , கூர்சிந்தனை திறன்,சிந்திக்கும்திறன் மற்றும் நினைவாற்றல் திறன் அதிகரிக்கும்.

Multiple Choice பலவுள்) தேர்வு(

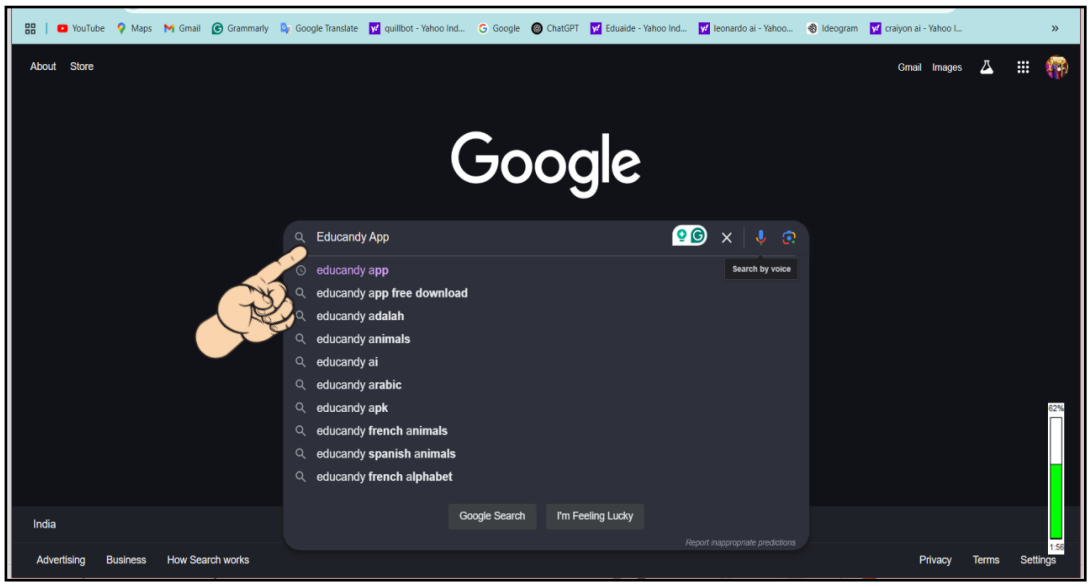
ஒரு கேள்விக்கு நான்கு விடைகள் கொடுக்கப்பட்டிருக்கும் . ஒவ்வொருகேள்விக்கும் வினாடிகள் கொடுக்கப்பட்டிருக்கும். சரியான 30 விடையை வினாடிக்குள் 30 தேர்வு செய்து கேள்விக்கு பதிலளிக்க வேண்டும். அவ்வாறு பதிலாளித்தால் மதிப்பெண் வழங்கப்படும் . இவ்விளையாட்டைஅனைத்து பாடத்திற்கும் பயன்படுத்தலாம் இந்த . விளையாட்டு மூலம் மாணவர்களின் நேர மேலாண்மை திறன் , கூர்சிந்தனை திறன், சிந்திக்குமதிறன் மற்றும் நினைவாற்றல் திறன் அதிகரிக்கும்.

Noughts & Crosses (டிக்-டாக்-டோ)

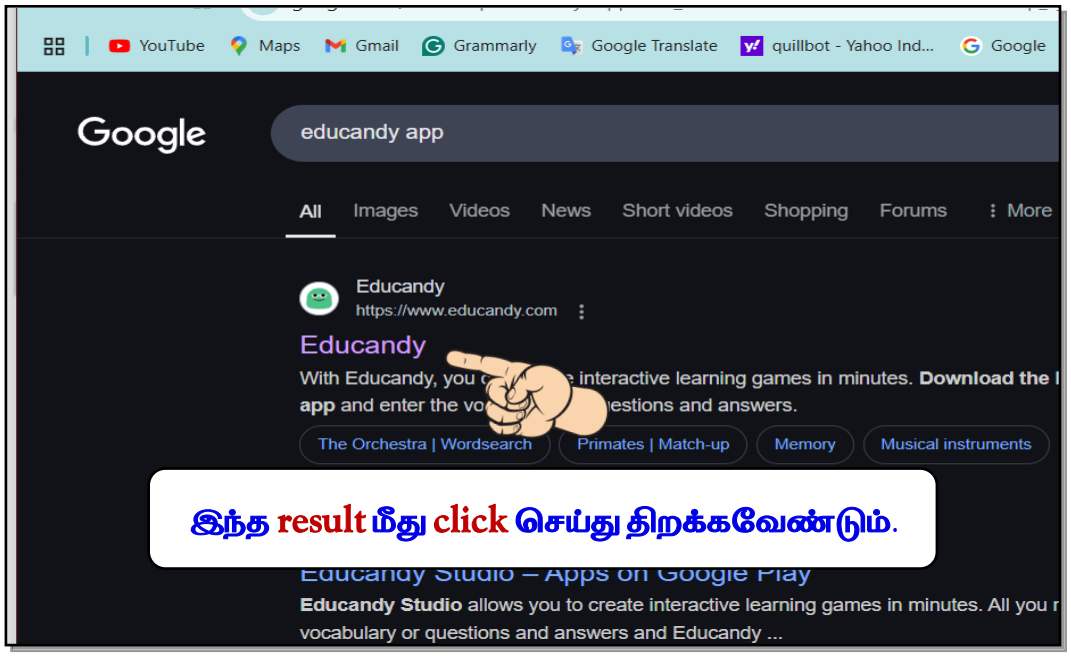
இந்த விளையாட்டு தானே கற்கும் விளையாட்டு ஆகும் ஒருவர் . மாணவர் மற்றொருவர் கணினி ஆகும் .இந்த திரையில் தோன்றும் கேள்விகளுக்கு பொருத்தமான விடையை Drag செய்துஅந்த கட்டத்தில் இணைக்க வேண்டும்அவ்வாறு . மாணவர் இணைக்கும் போது கட்டத்தில் X என்றகுறியீடு போடப்படும் கணினி .விளையாடும்போது கட்டத்தில் O என்றகுறியீடு போடப்படும் இந்த .விளையாட்டை நேர் கட்டமாகவோ அல்லது- Cross கவோ கட்டமாகவோ விடையளிக்க வேண்டும் தொடர்ந்து .மூன்று கட்டங்களை முடிப்பவரே வெற்றி பெற்றவர் ஆவர் இவ்விளையாட்டை .அனைத்து பாடத்திற்கும் பயன்படுத்தலாம்.

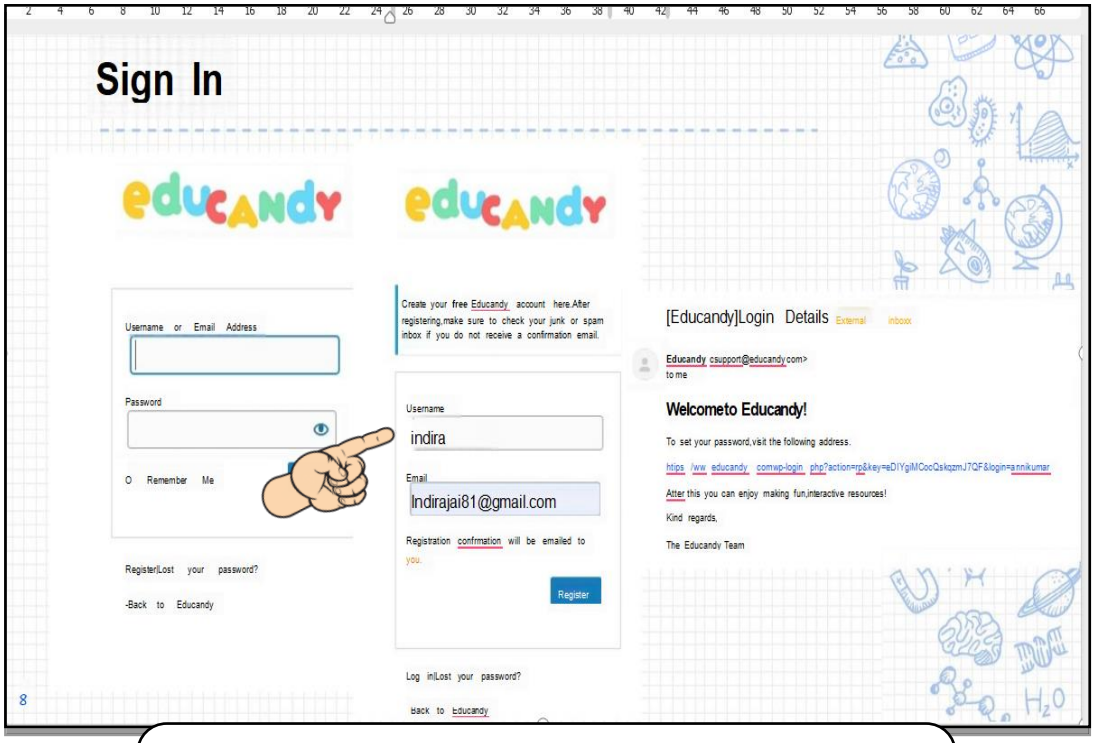
இந்தவிளையாட்டு மூலம் மாணவர்களின் நேர மேலாண்மை திறன், கூர்சிந்தனை திறன், சிந்திக்கும்திறன் மற்றும் நினைவாற்றல் திறன் அதிகரிக்கும். மாணவர் ஒருவர் மற்றொருவர் கணினி அல்லது மடிக்கணினி ஆவர். இந்த விளையாட்டுகள் வெவ்வேறு பாடங்களில் உள்ள சொல்லகராதி, எழுத்துப்பிழை மற்றும் பொது அறிவை வலுப்படுத்த சிறந்தவையாகும்.

Educandy App

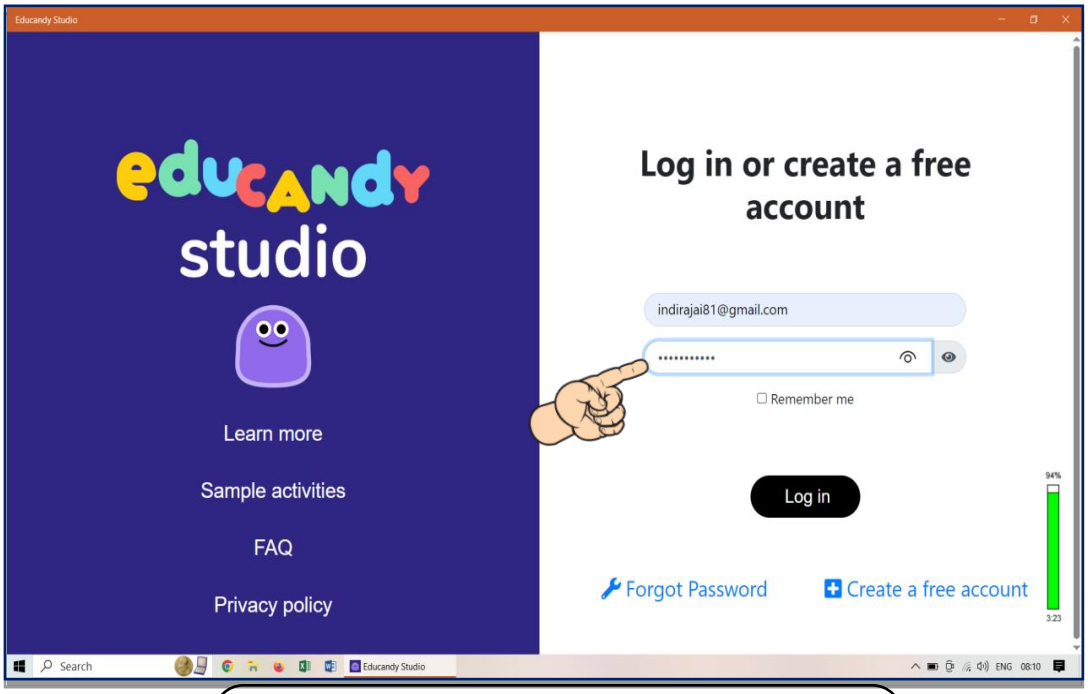


- முதலில் ஏதாவது ஒரு உலாவியை (Browser) open செய்ய வேண்டும்.
- பின்னர் search bar ல் Educandy App என தட்டச்சு செய்து தேடவேண்டும்.

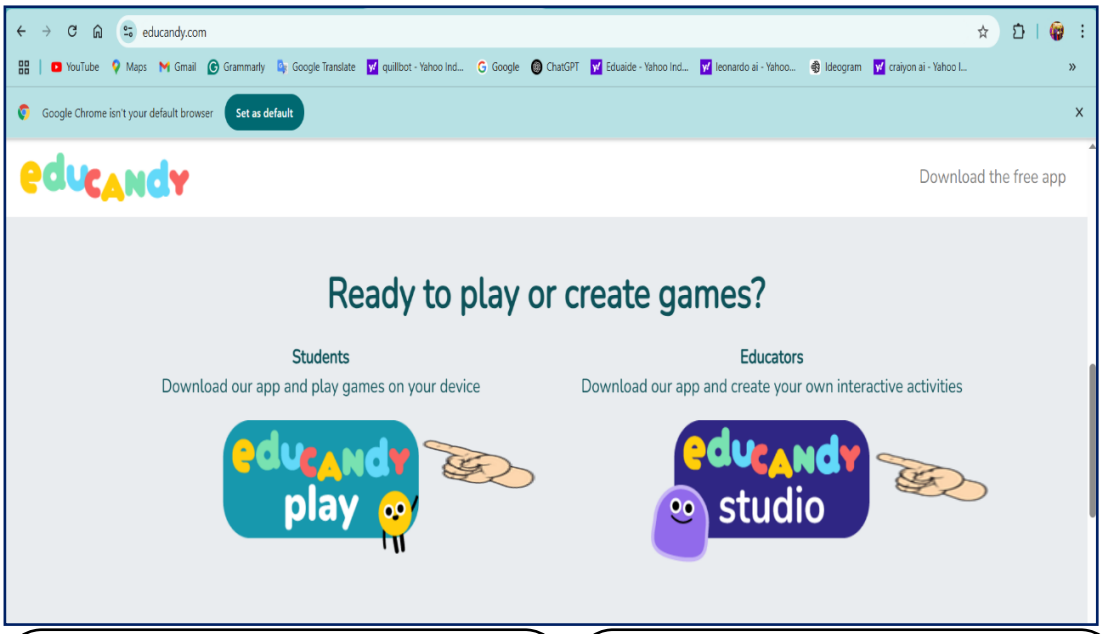




நீங்கள் Educandy App -குள் செல்லும் முன் இது போன்று Register செய்து உள்நுழைய வேண்டும் .

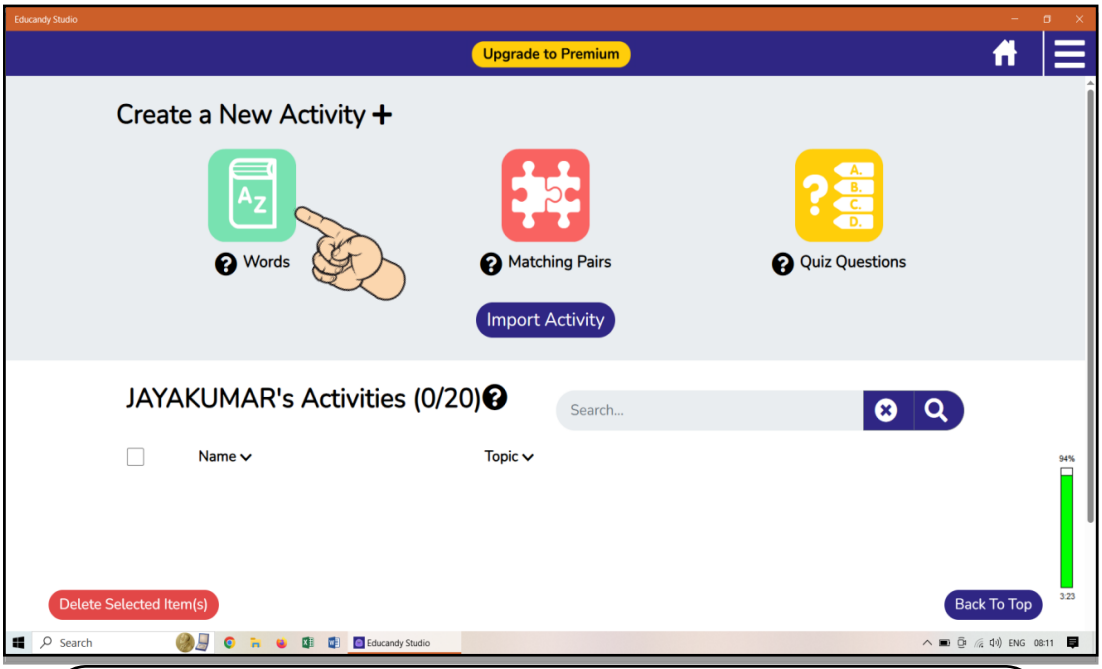


உங்கள் Google கணக்கைப் பயன்படுத்தி உள்நுழைய வேண்டும்.

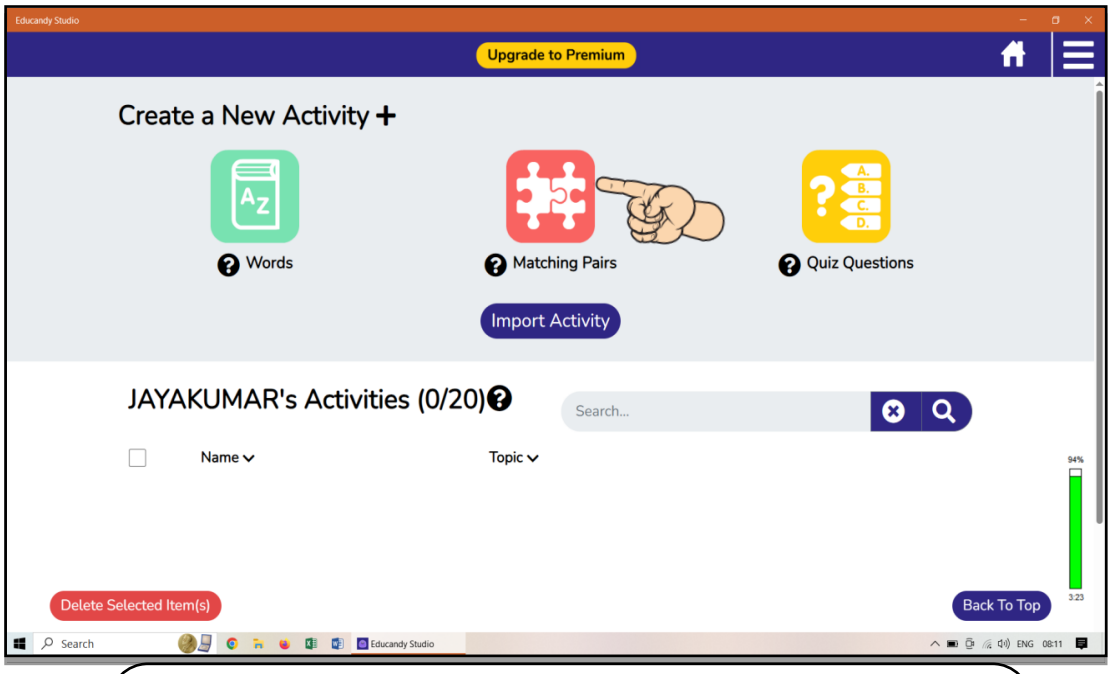


இந்த Educandy Play - வை மாணவர்கள் பதிவிறக்கம் செய்ய வேண்டும்.

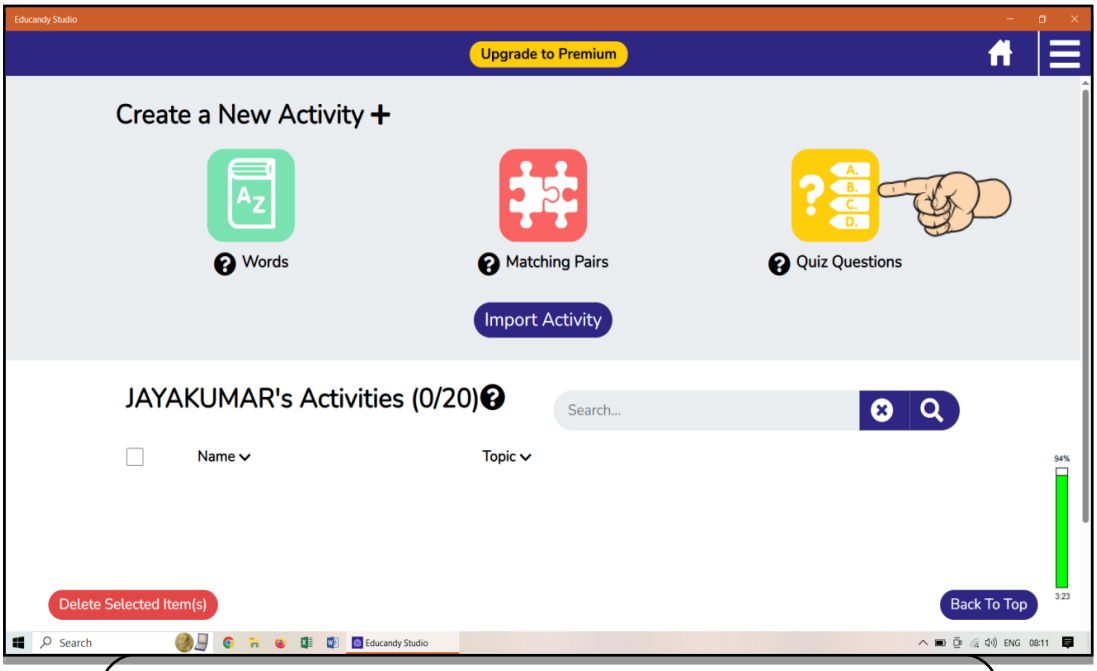
இந்த Educandy Studio - வை ஆசிரியர்கள் பதிவிறக்கம் செய்ய வேண்டும்.



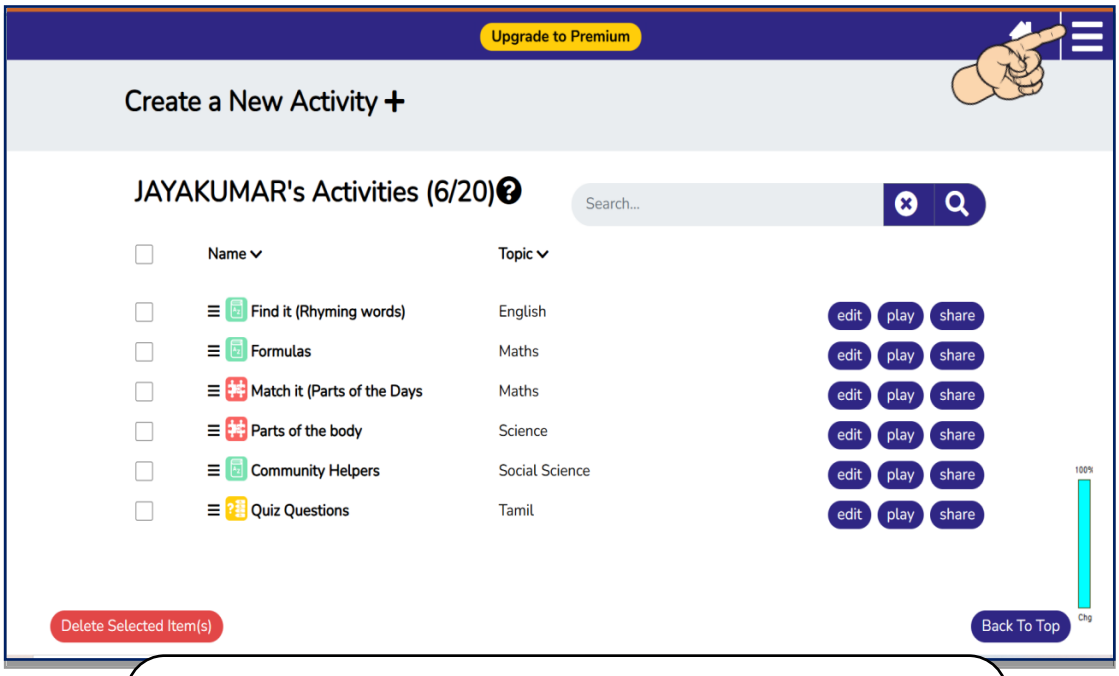
இதுவே நாம் செயல்பாடுகளை உருவாக்கும் பகுதி ஆகும். Words பகுதியில் ஆங்கிலம், அறிவியல் மற்றும் சமூக அறிவியல் பாடத்திற்கு செயல்பாடுகள் உருவாக்க பயன்படும்



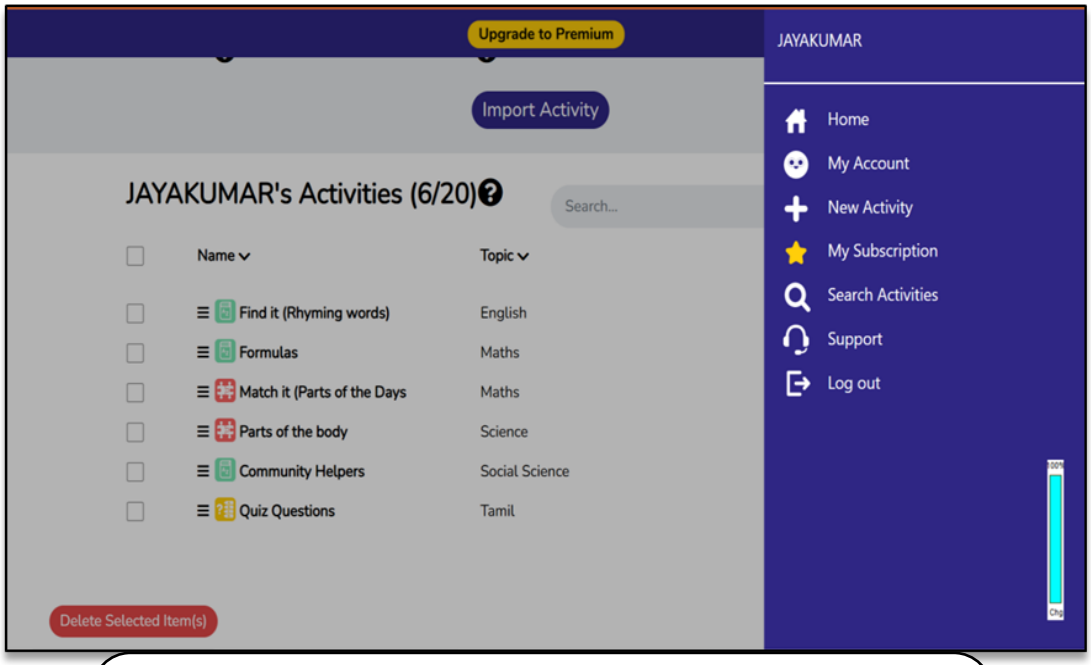
இதுவே நாம் செயல்பாடுகளை உருவாக்கும் பகுதி ஆகும். Matching Pairs பகுதியில் அனைத்து பாடத்திற்கும் செயல்பாடுகள் உருவாக்க பயன்படும்



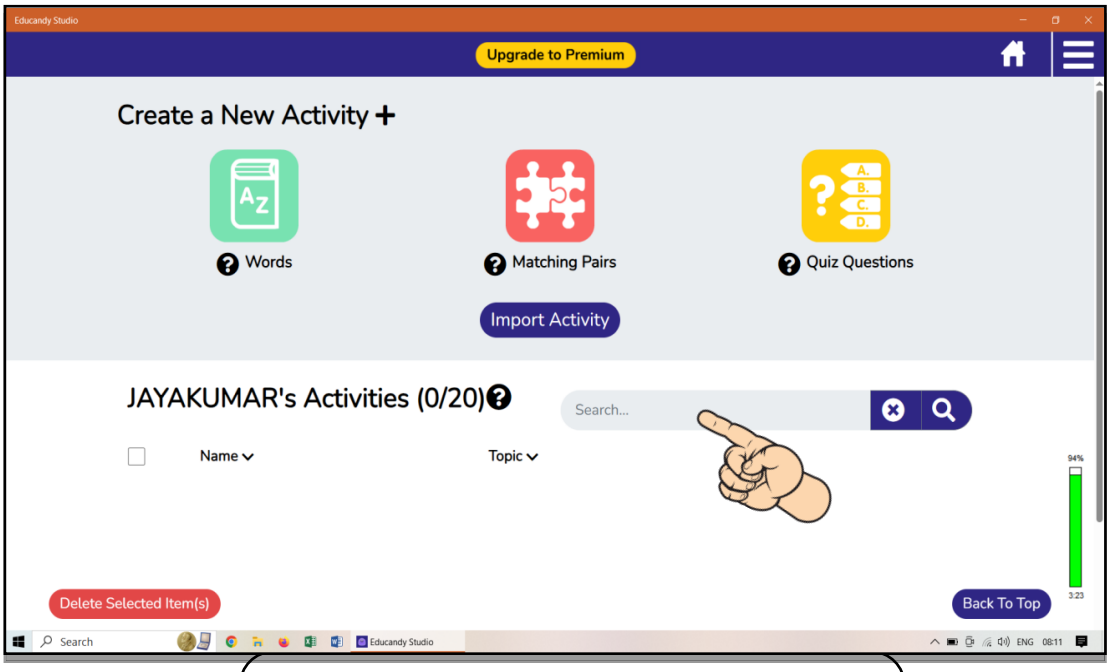
இதுவே நாம் செயல்பாடுகளை உருவாக்கும் பகுதி ஆகும். Quiz Questions பகுதியில் அனைத்து பாடத்திற்கும் செயல்பாடுகள் உருவாக்க பயன்படும்



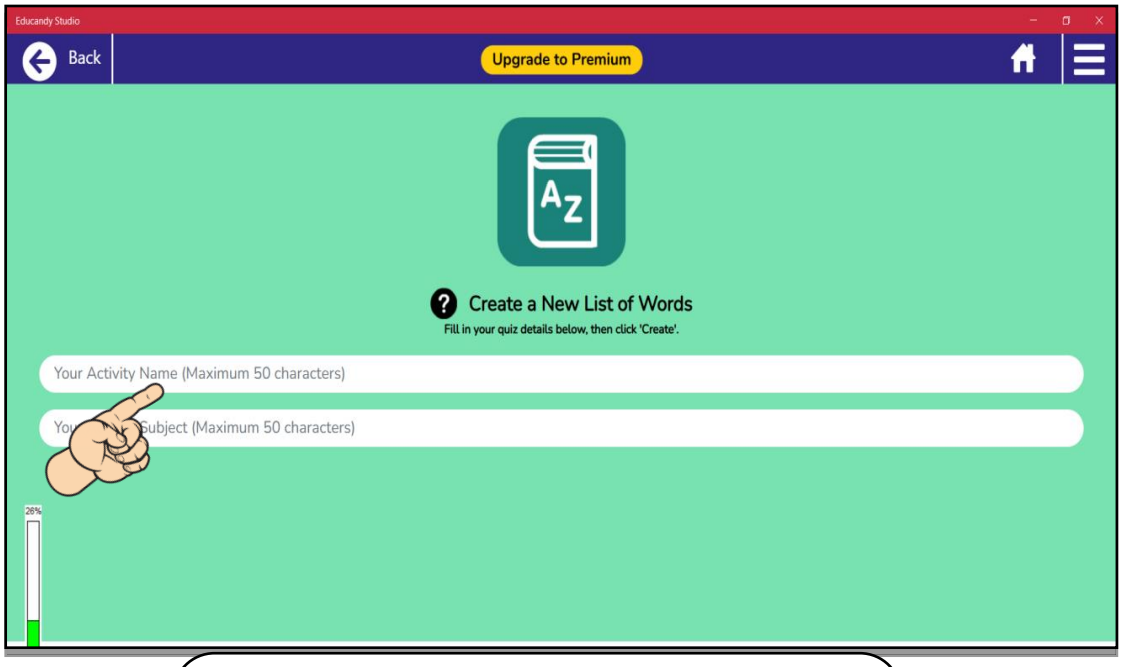
வலது பக்கம் மூலையில் மூன்று கோடு உள்ளது. அந்த கோட்டை click செய்தால் நம் account விவரம் மற்றும் நாம் உருவாக்கிய activities யை பார்க்கலாம்.



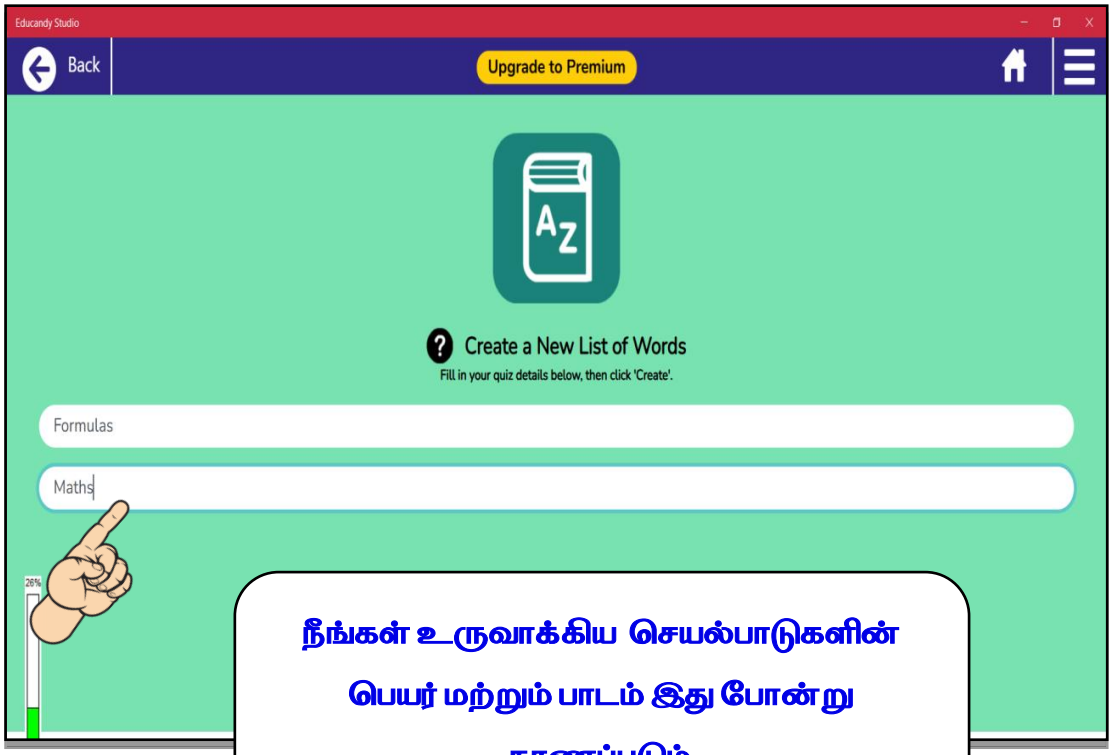
நம் details அனைத்தும் செய்து உள்ளது. அந்த கோட்டை click செய்தால் account விவரம் மற்றும் நாம் உருவாக்கிய activities பார்க்கலாம்.



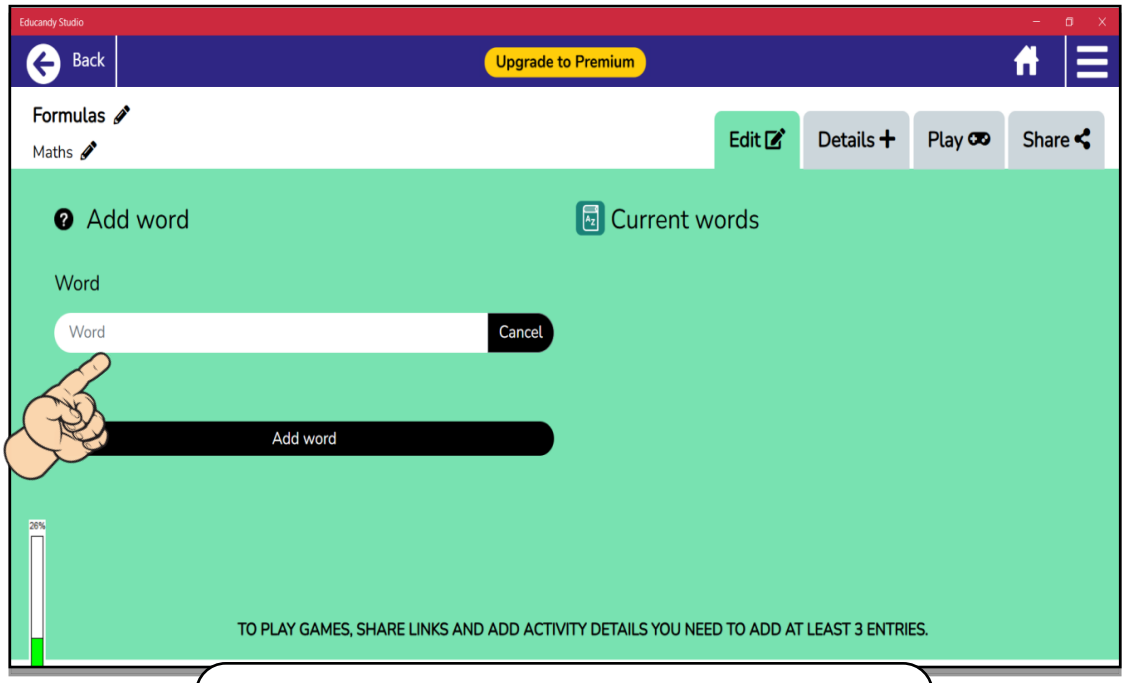
இதுவே நாம் செயல்பாடுகளை உருவாக்கும் பகுதி ஆகும்.



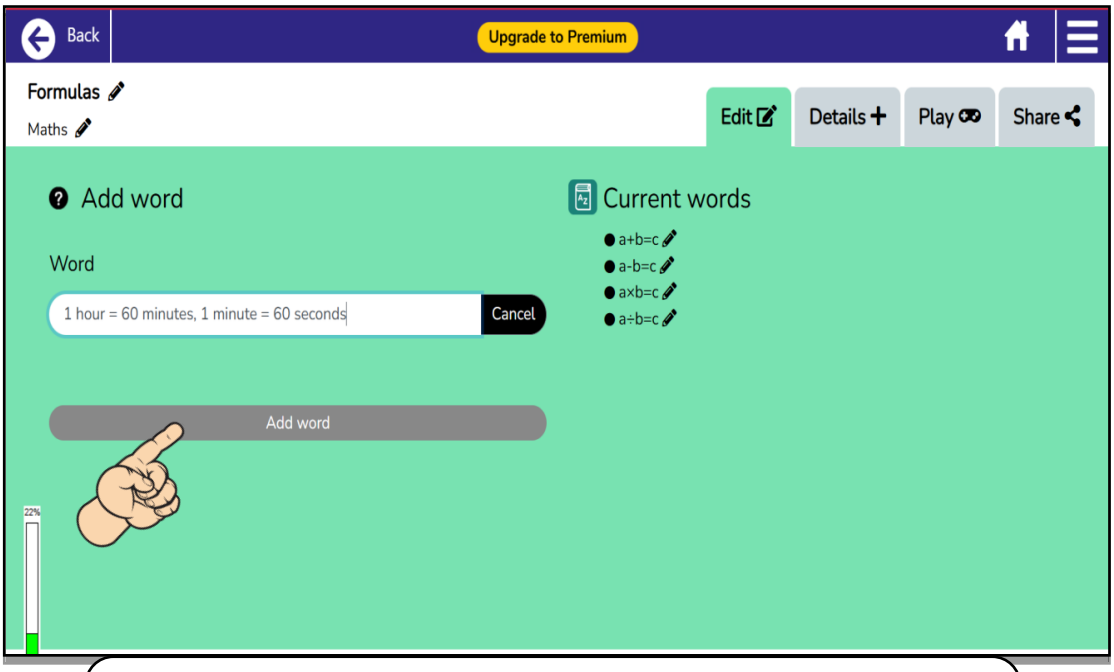
நீங்கள் உருவாக்கும் செயல்பாடுகளுக்கு பொருத்தமான பெயர் மற்றும் பாடம் உள்ளீடு செய்யவேண்டும்.



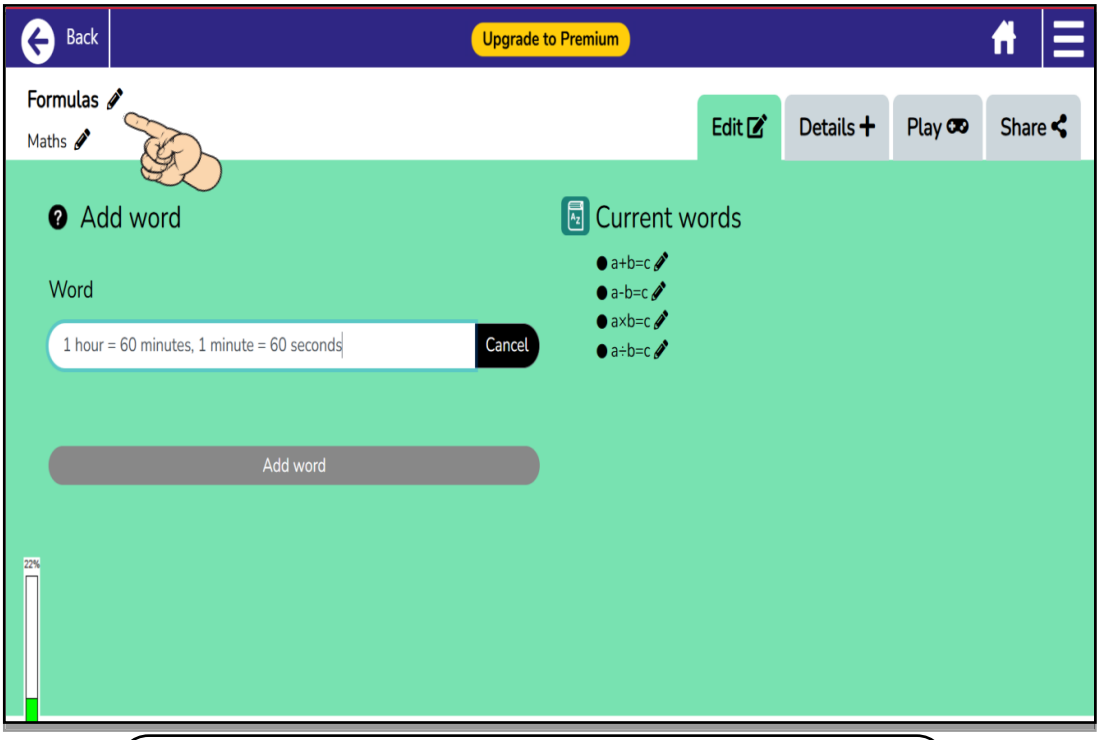
நீங்கள் உருவாக்கிய செயல்பாடுகளின் பெயர் மற்றும் பாடம் இது போன்று காணப்படும்.



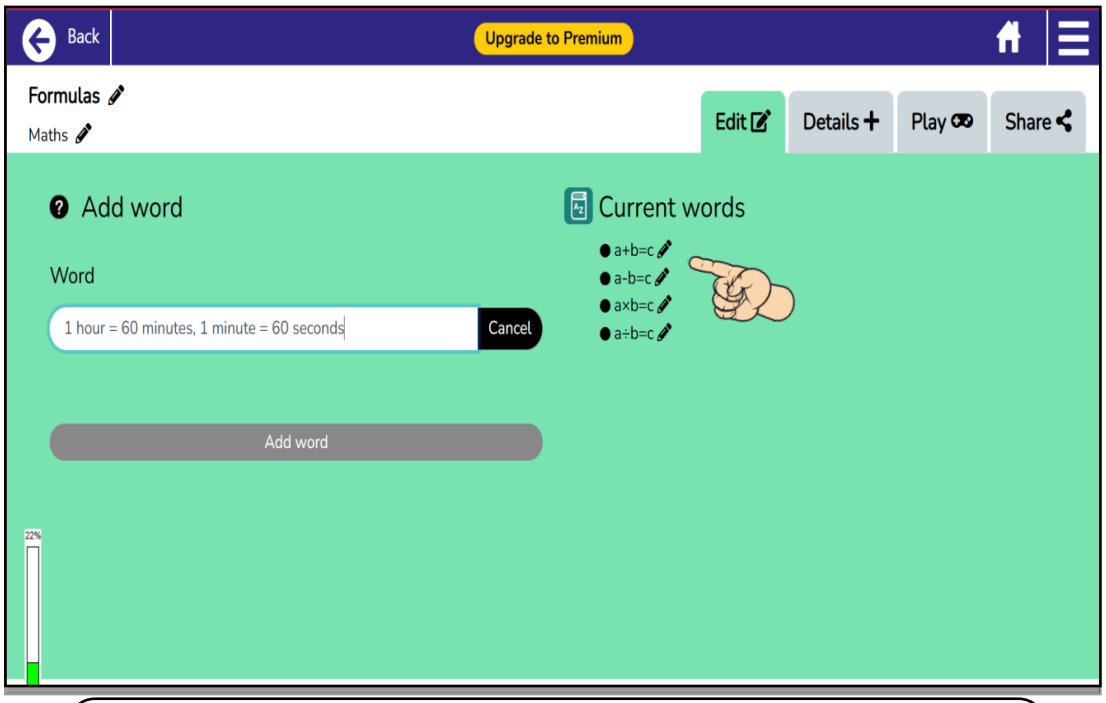
இப்போது நீங்கள் செயல்பாடுகளை இங்கே உள்ளீடு செய்யவேண்டும்.



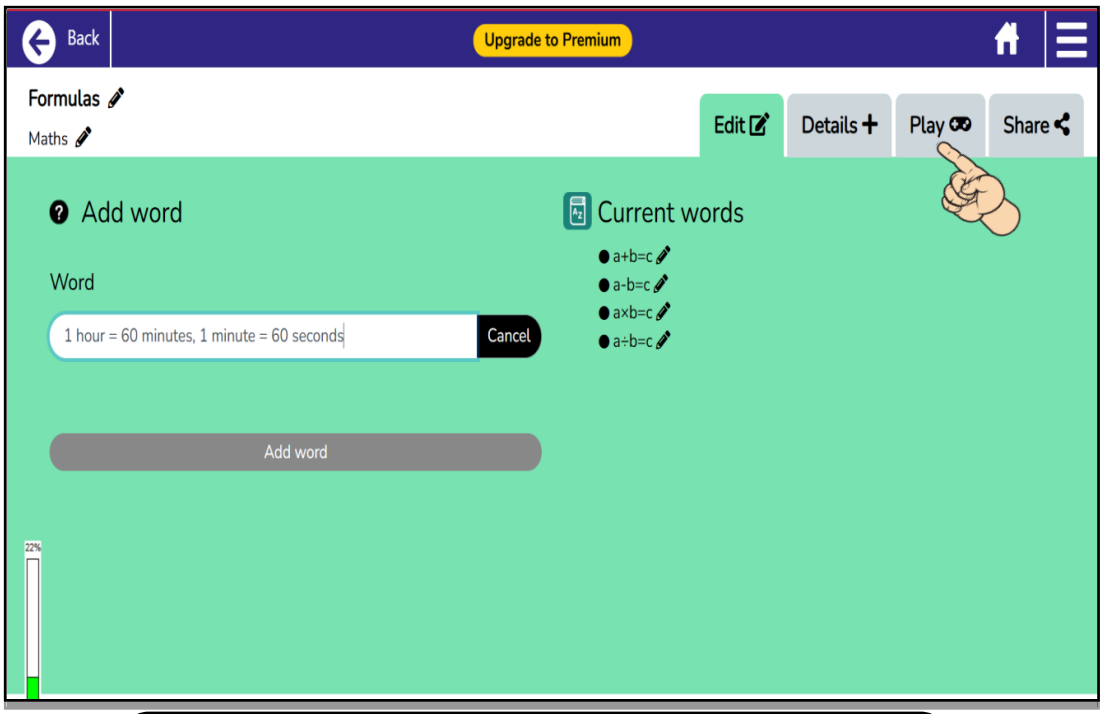
பல வார்த்தைகளை உருவாக்க Add word option icon-யை பயன்படுத்தி உள்ளீடு செய்யவேண்டும்.



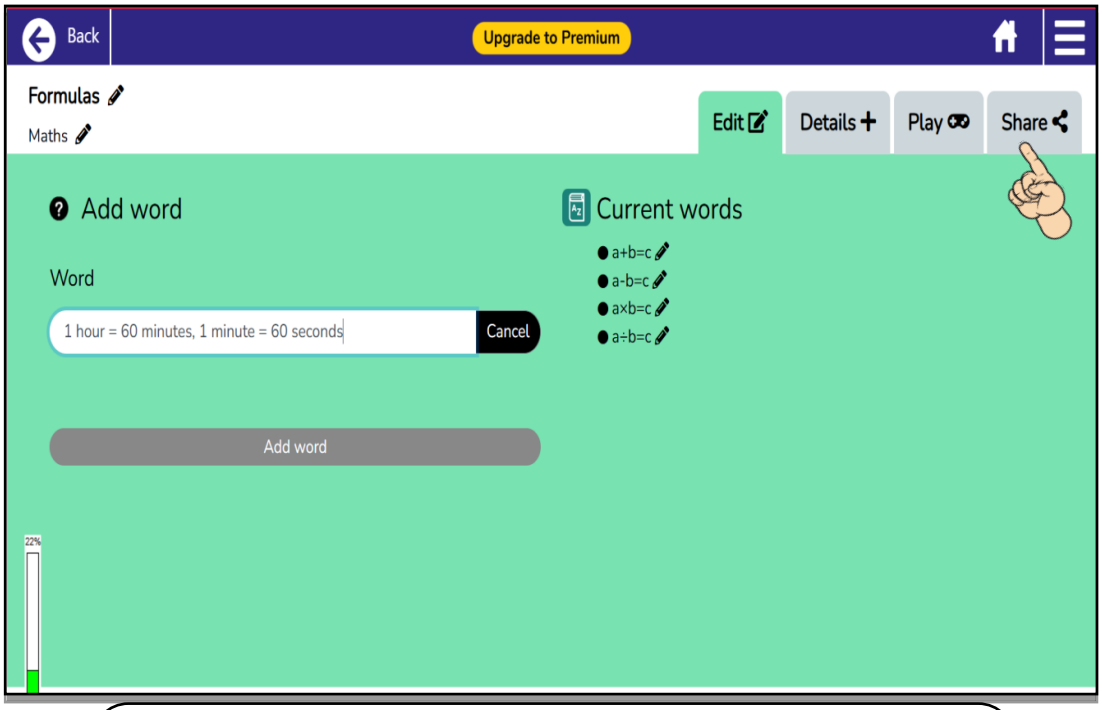
Subject மற்றும் Lesson Title மாற்ற Pen icon-யை பயன்படுத்தி மாற்ற வேண்டும்.



Content தவறானலோ அல்லது வேறு மாற்ற வேண்டுமானல் Pen icon-யை பயன்படுத்தி மாற்றம் செய்ய

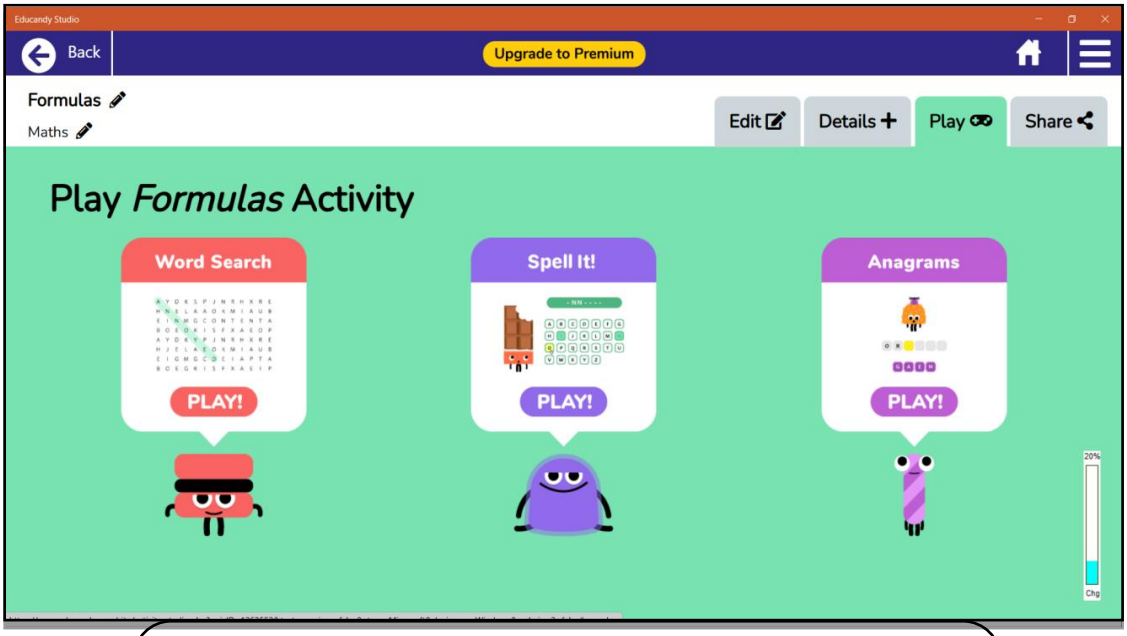


நாம் உருவாக்கிய செயல்பாடுகளை Play Option -யை விளையாட வேண்டும்.

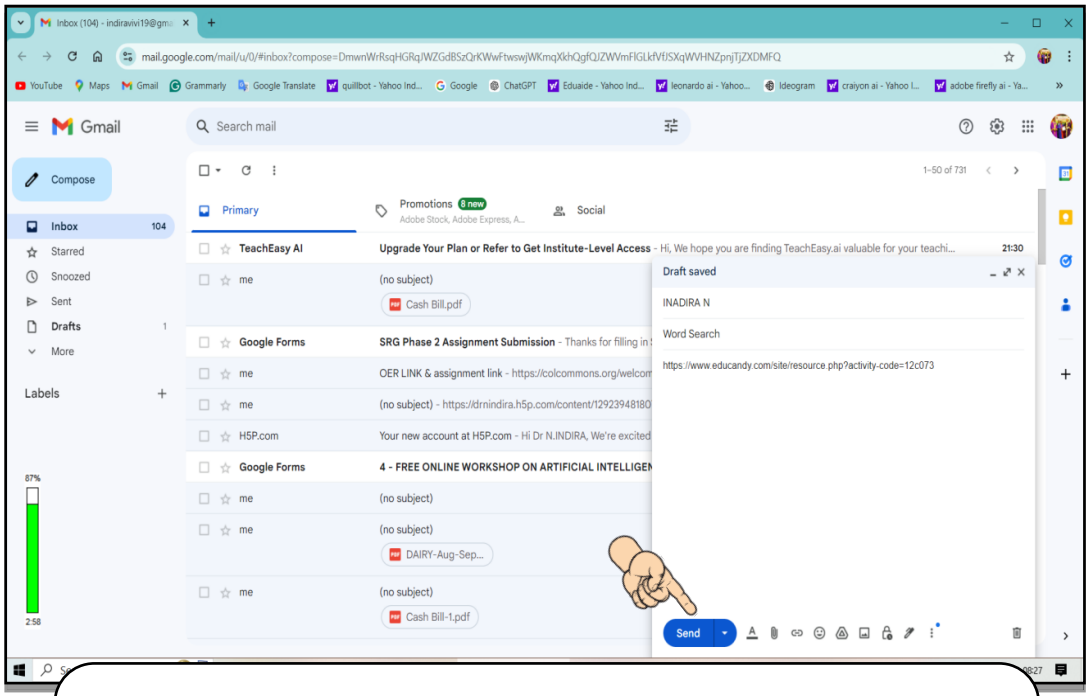


நாம் உருவாக்கிய செயல்பாடுகளை மாணவர்கள் விளையாட Share Option –யை Click செய்து அதில் உள்ள Copy செய்து Share செய்ய வேண்டும்.

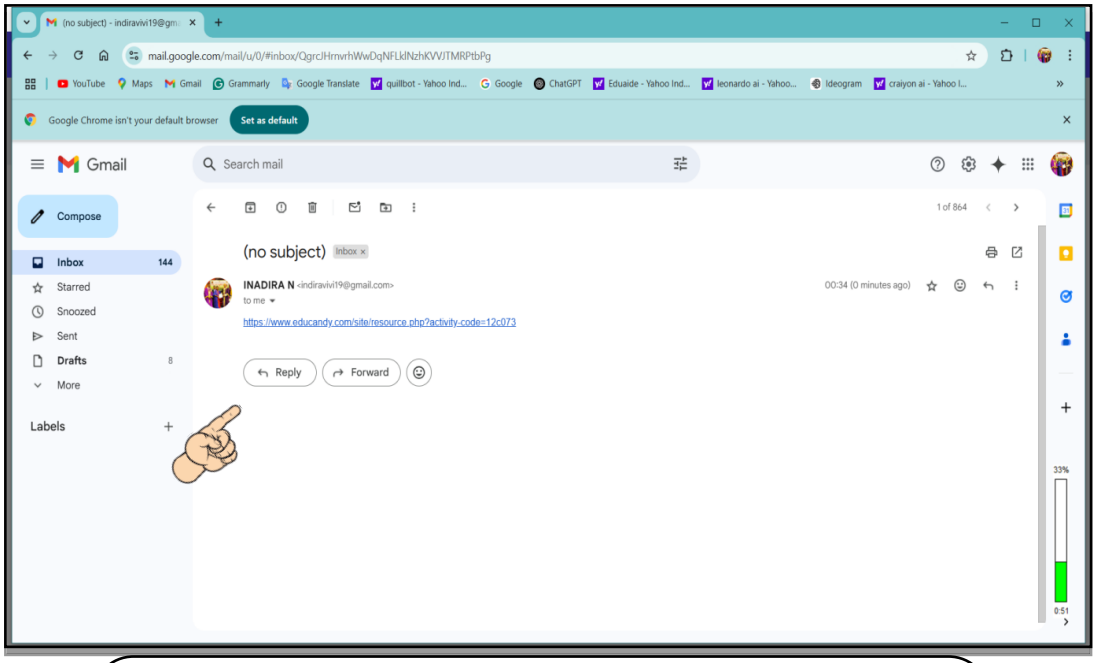
Share Formulas Activity icon -னில் உள்ள link மீது click செய்து copy செய்து கொள்ளவும். பின்னர் share என்ற icon உள்ள பகுதிக்கு சென்று அதனை click செய்து மாணவர்களுக்கு Share செய்ய



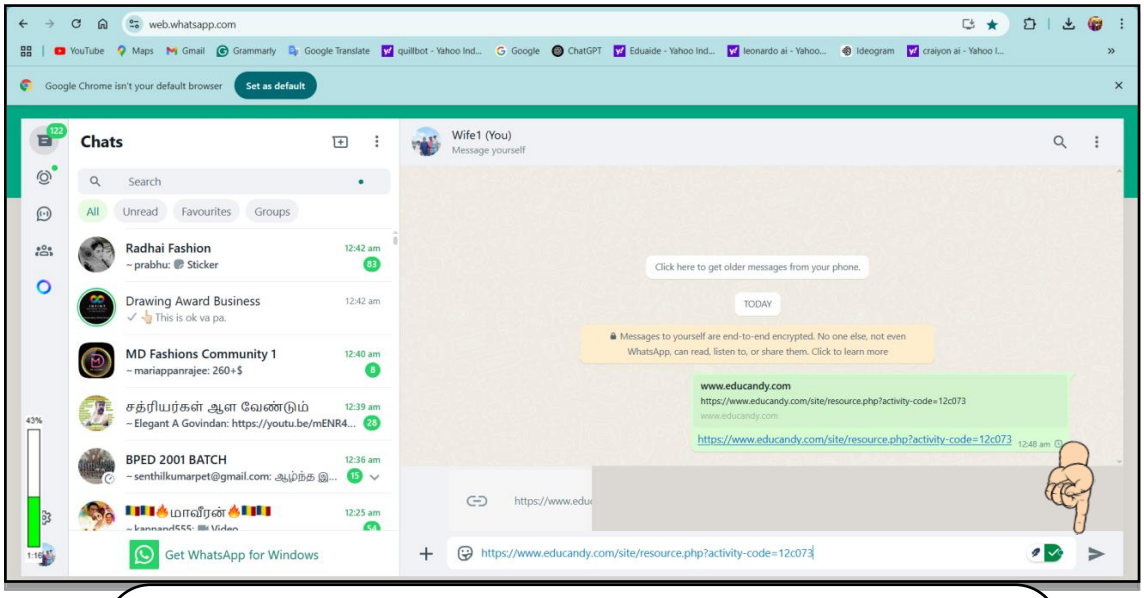
நீங்கள் உருவாக்கிய கணக்கு பாடத்தின் formulas செயல்பாட்டை இந்த மூன்று விளையாட்டை பயன்படுத்தி மாணவர்கள் விளையாடலாம்.



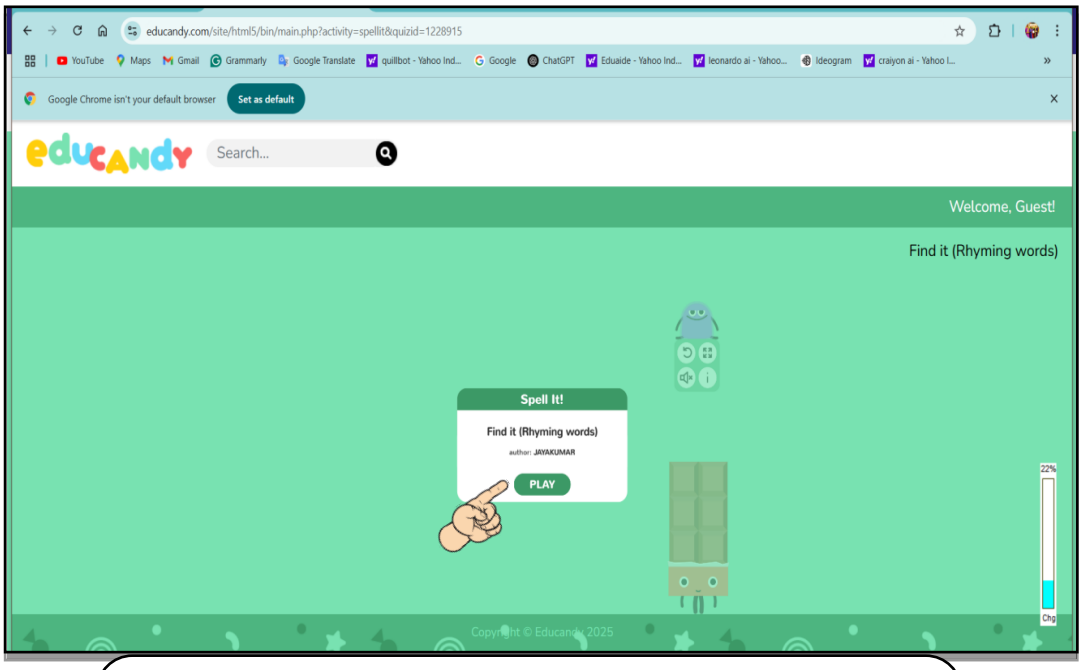
Share Formulas Activity icon -னில் உள்ள link-கை click செய்து copy செய்து கொள்ளவும். பின்னர் mail open செய்து link-யை paste செய்து மாணவர்களுக்கு Send செய்யவும்.



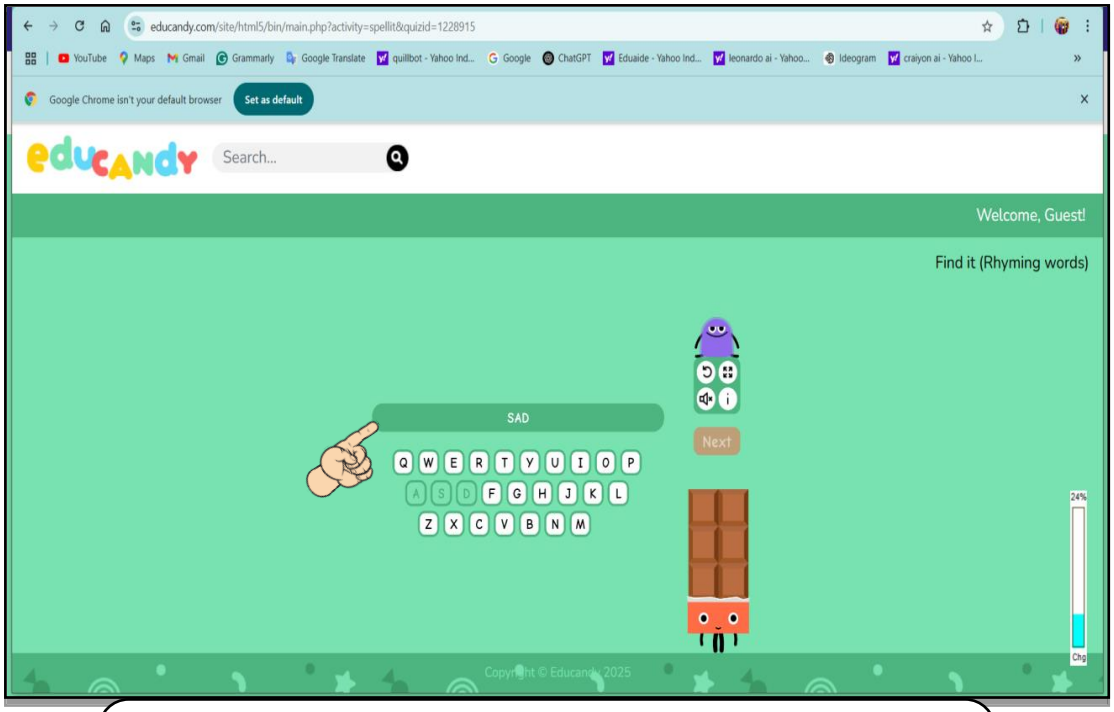
இந்த link - கை click செய்தவுடன் game open ஆகும். game open ஆன உடன் மாணவர்கள் விளையாட ஆரம்பிக்கலாம்.



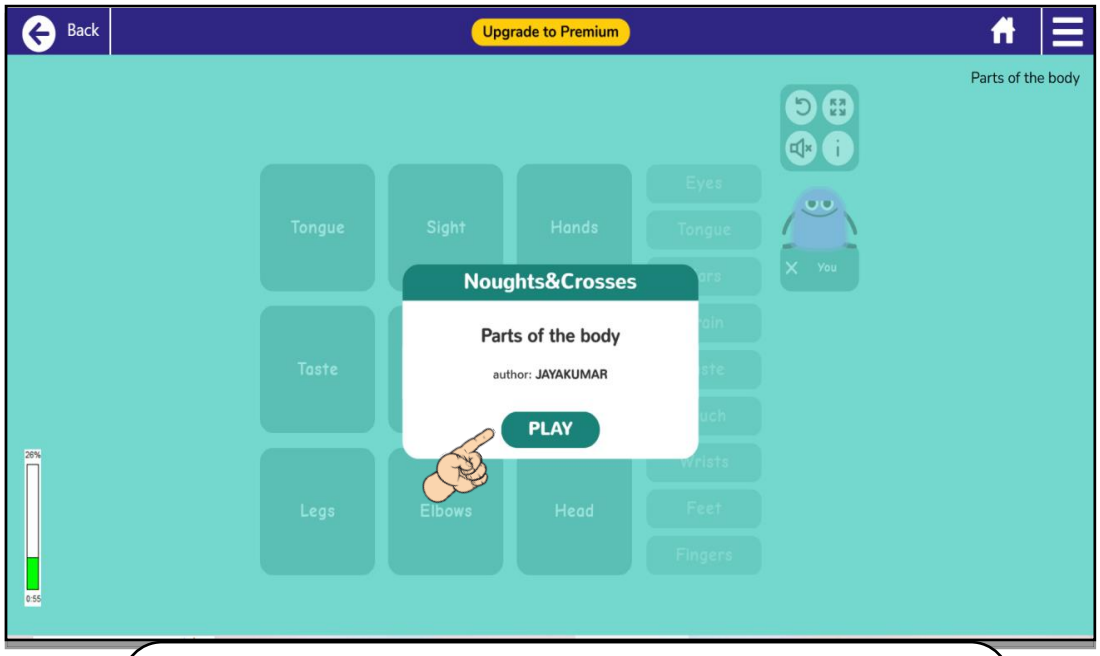
Share Formulas Activity icon - னில் உள்ள link - கை click செய்து copy செய்து கொள்ளவும். பின்னர் whatsapp open செய்து link-யை paste செய்து மாணவர்களுக்கு Send செய்யவும்.



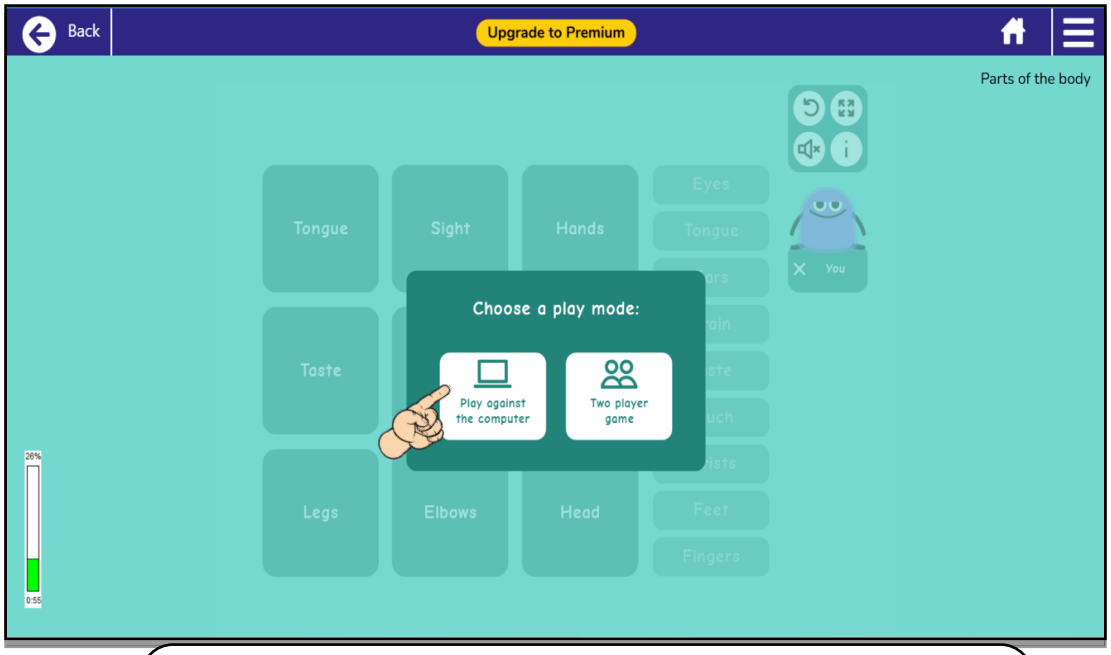
link - கை click செய்தவுடன் spell it game open ஆகும். game open ஆன உடன் மாணவர்கள் விளையாட ஆரம்பிக்கலாம்.



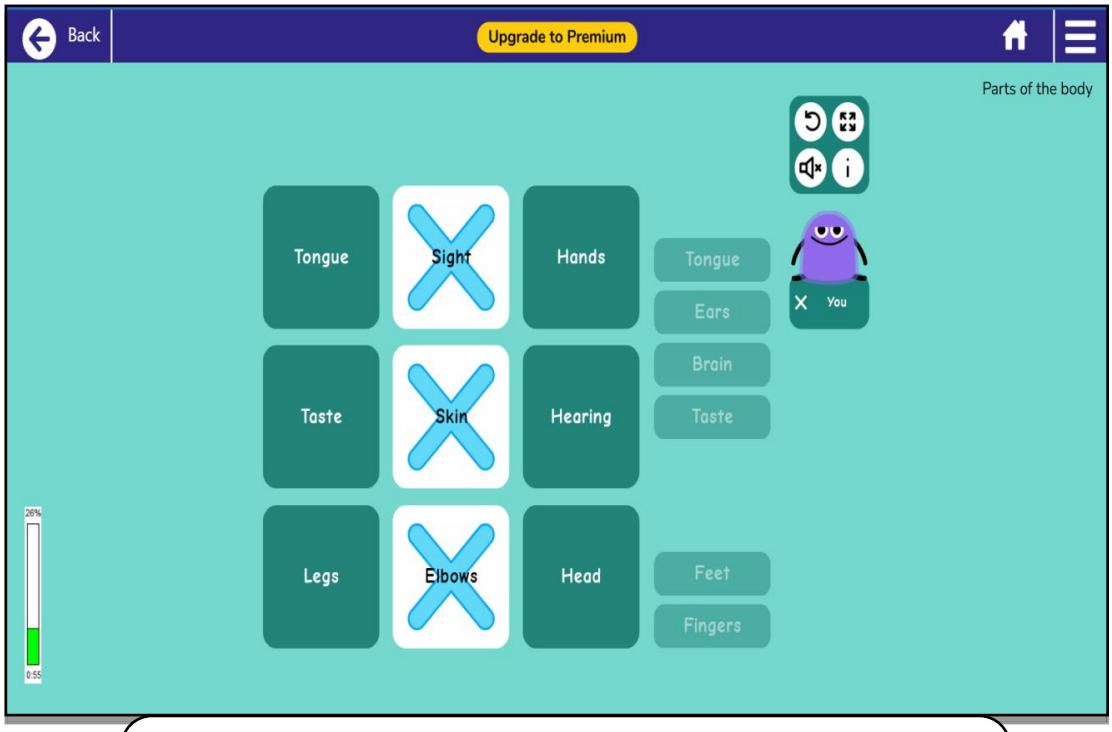
ஆங்கில பாடத்திற்கான spell it game இது போன்று காணப்படும்.



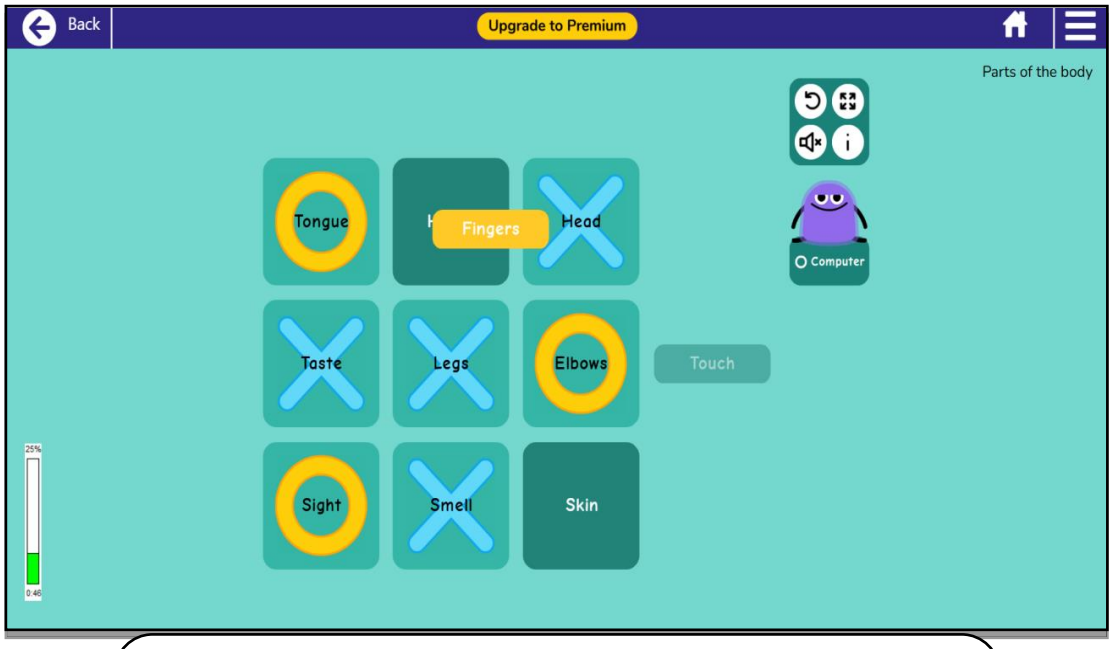
அறிவியல் பாடத்திற்கான Noughts & Crosses - இது போன்று காணப்படும். மாணவர்கள் விளையாட துவங்கலாம்.



அறிவியல் பாடத்திற்கான Noughts & Crosses - இருவர் விளையாடும் விளையாட்டு



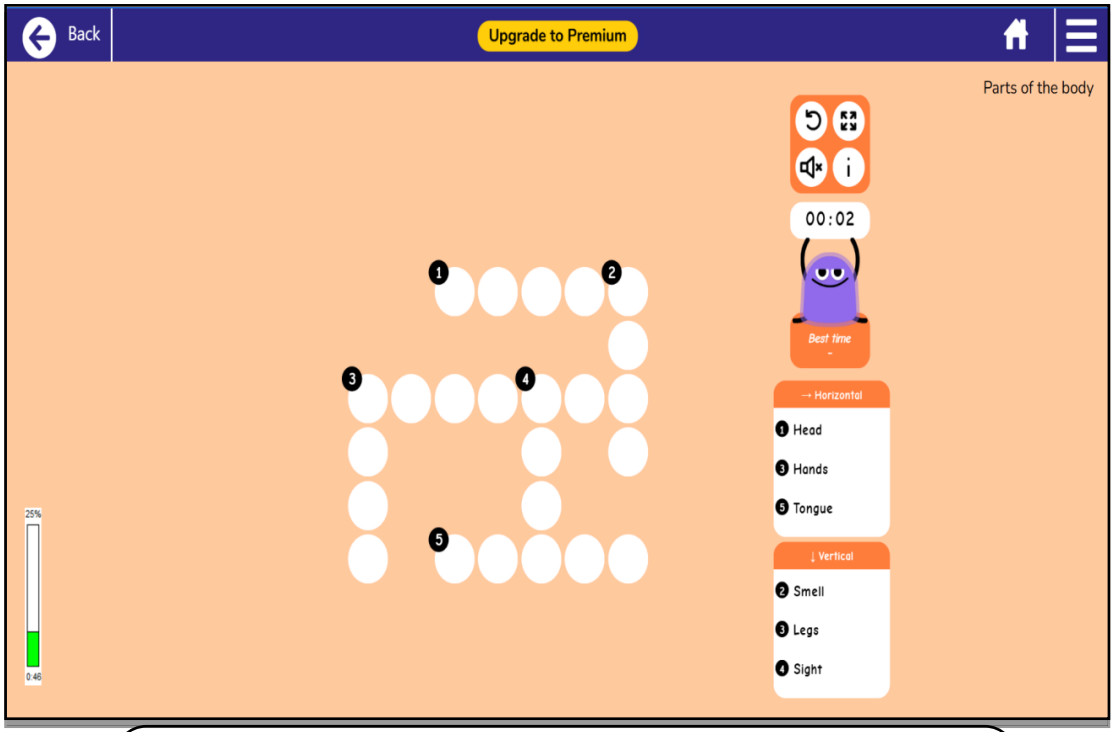
அறிவியல் பாடத்திற்கான Noughts & Crosses விடையளித்தவுடன் இது போன்று காணப்படும்.



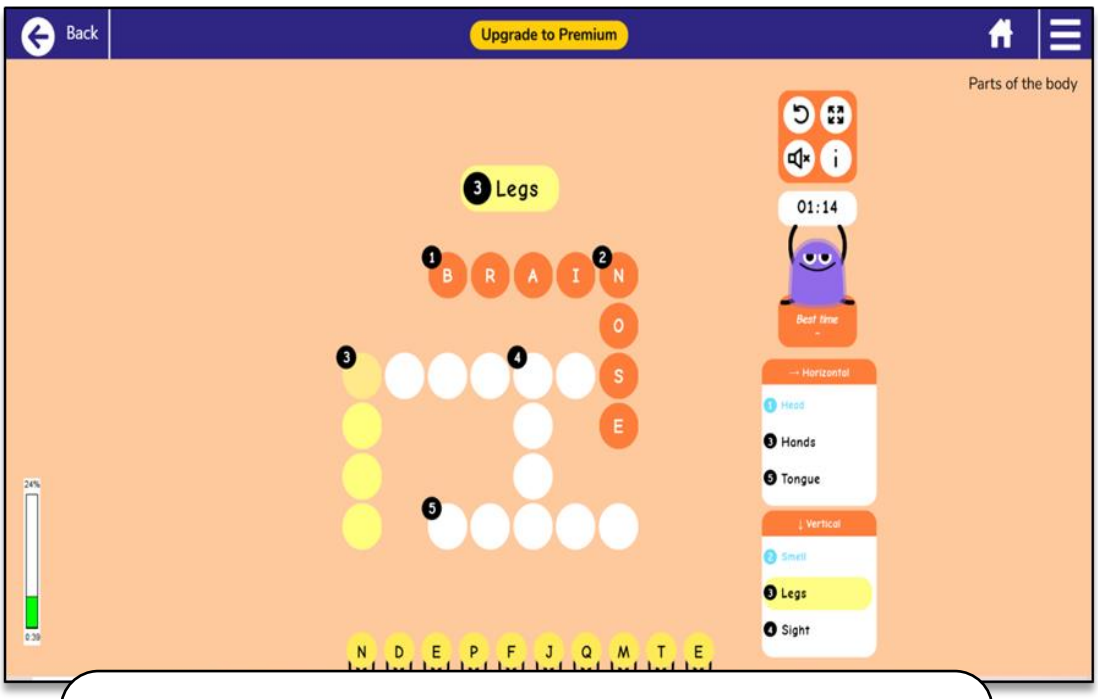
அறிவியல் பாடத்திற்கான Noughts & Crosses இருவர் விளையாடி விடையளித்தவுடன் இது போன்று காணப்படும்.

அறிவியல் பாடத்திற்கான Crosswords game

மாணவர்கள் விளையாட துவங்கலாம்.

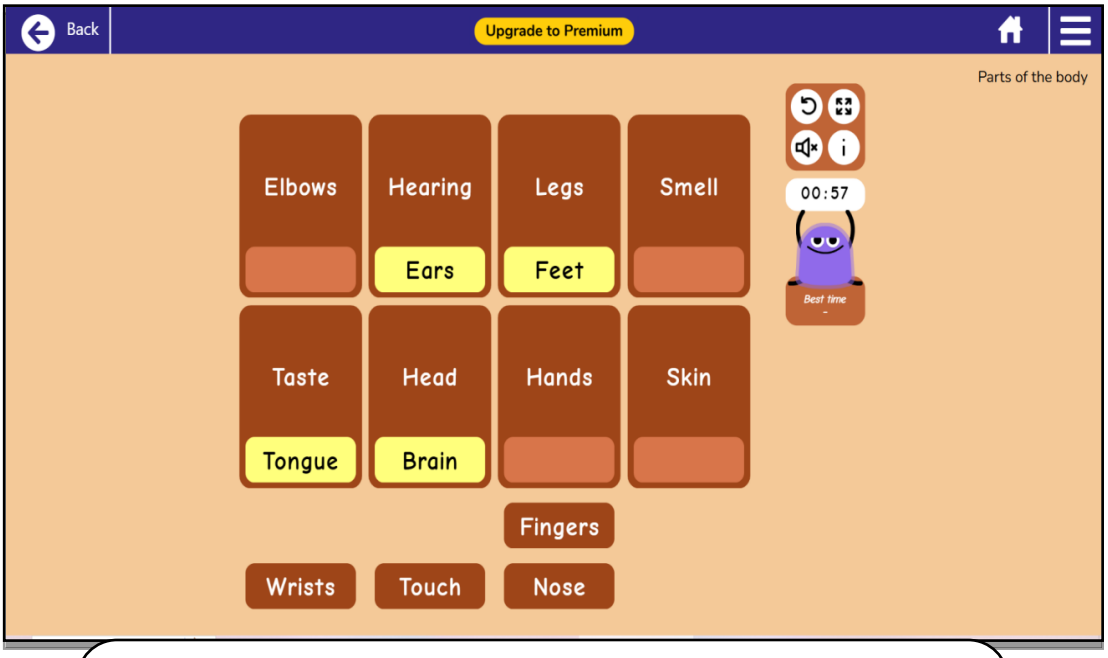


அறிவியல் பாடத்திற்கான Crosswords இது போன்று காணப்படும். மாணவர்கள் விளையாட துவங்கலாம்.



அறிவியல் பாடத்திற்கான Crosswords இது போன்று காணப்படும். விளையாடி விடையளித்தவுடன் இது போன்று காணப்படும்.

அறிவியல் பாடத்திற்கான Match-up game மாணவர்கள் விளையாட துவங்கலாம்.



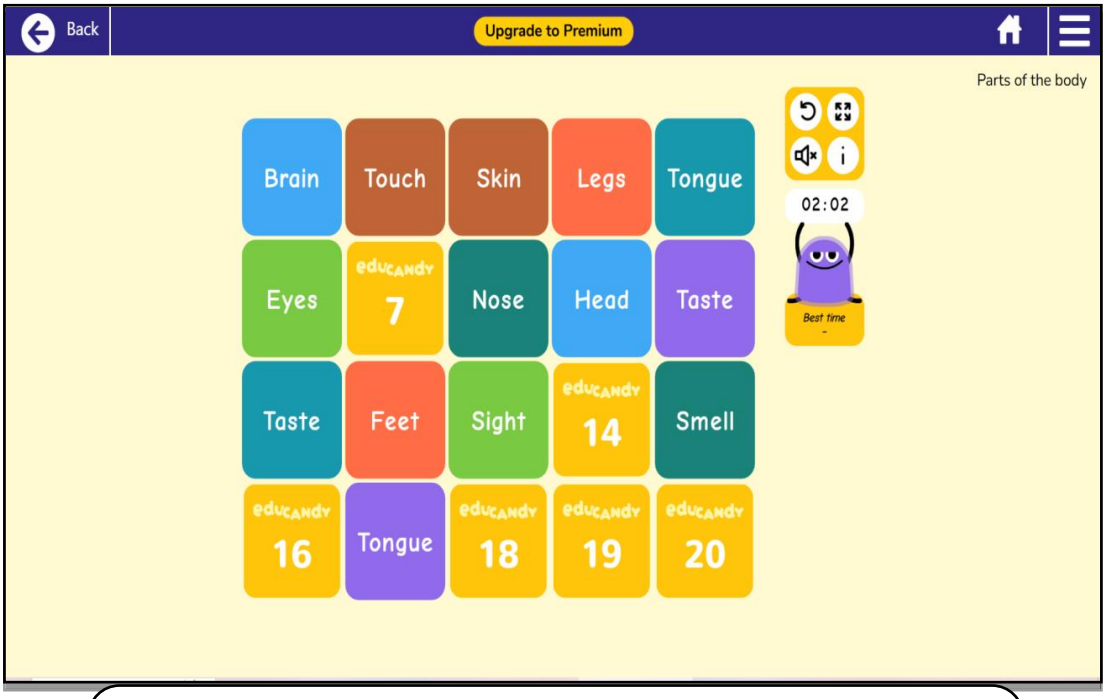
அறிவியல் பாடத்திற்கான Match-up game

கேள்விக்கான விடையை drag செய்து விடையளிக்க

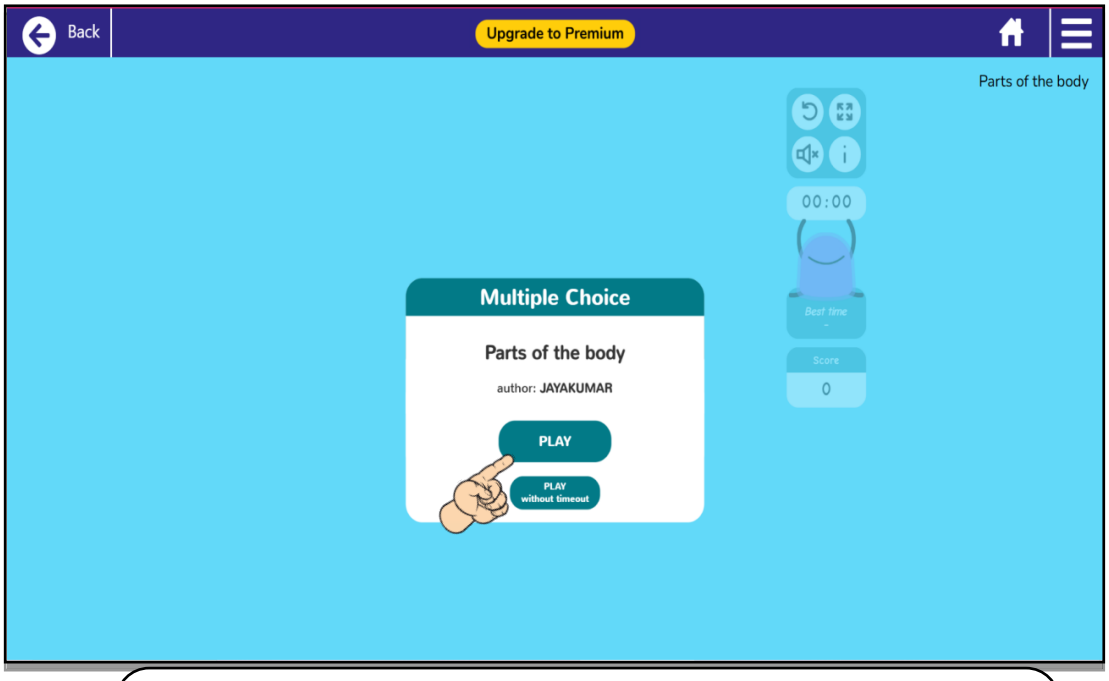
வேண்டும். விடையளித்தவுடன் இது போன்று

அறிவியல் பாடத்திற்கான Memory game மாணவர்கள்

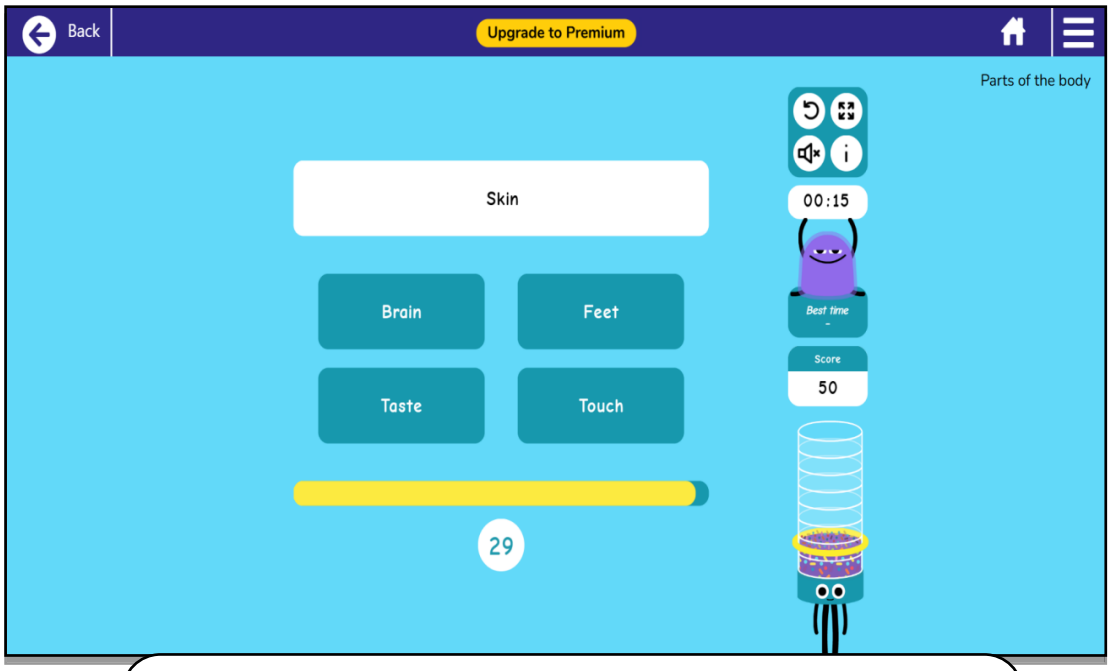
விளையாட துவங்கலாம்.



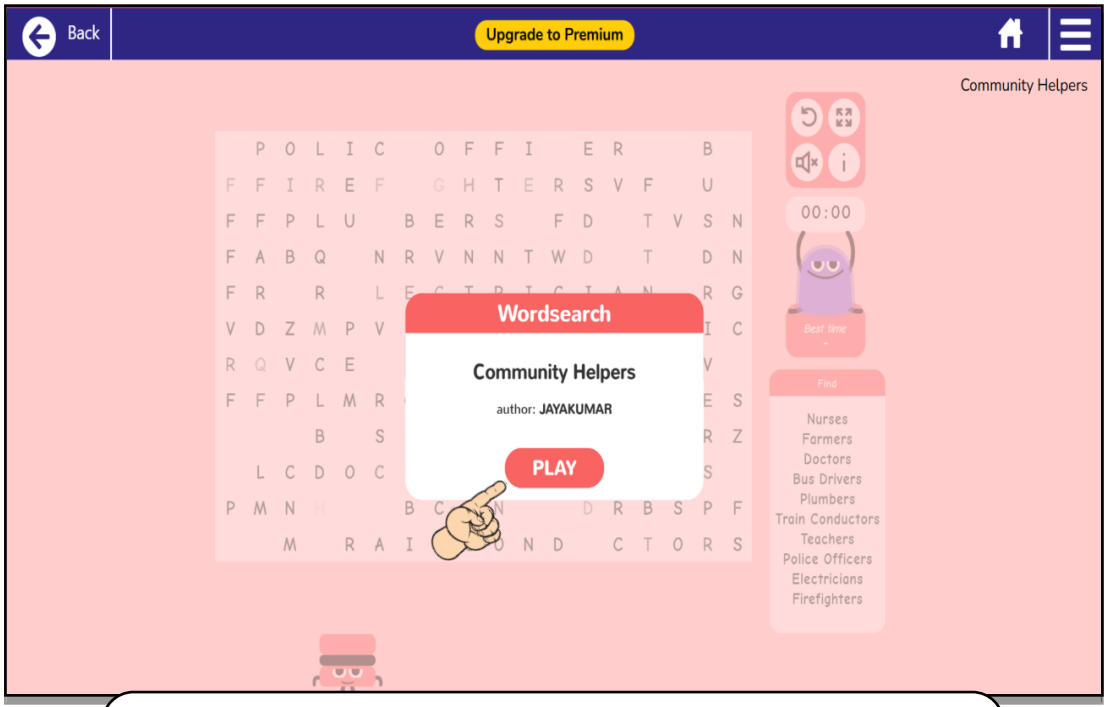
Memory game card - யை match செய்து விளையாட வேண்டும். விளையாடியவுடன் இது போன்று



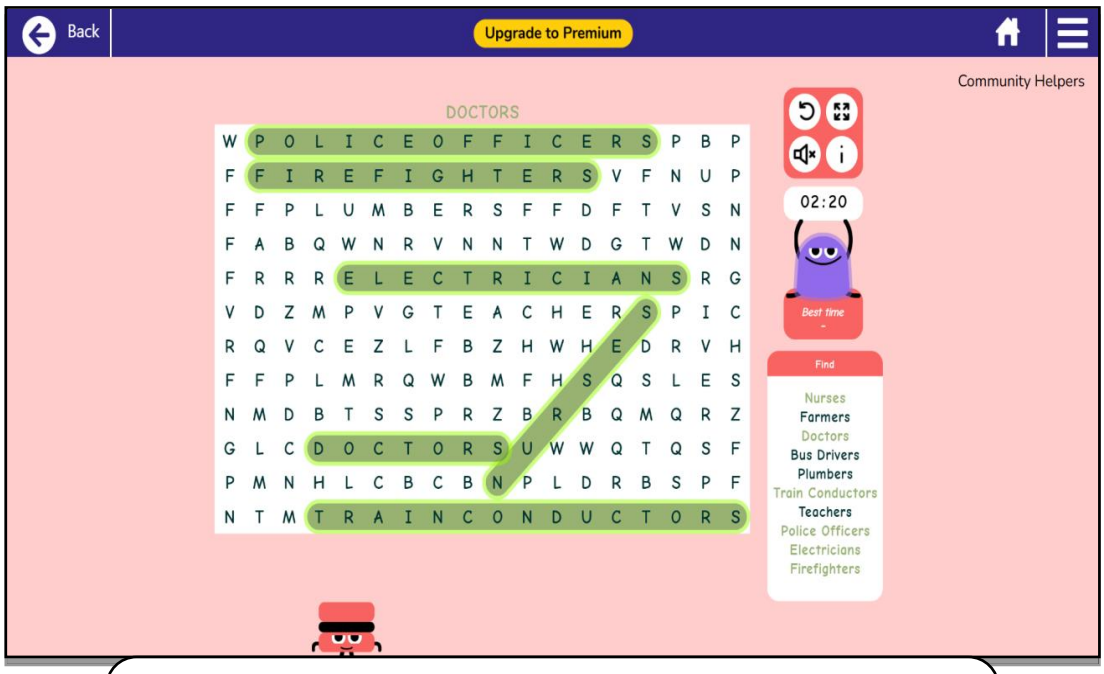
அறிவியல் பாடத்திற்கான Mutiple Choice game மாணவர்கள் விளையாட துவங்கலாம்.



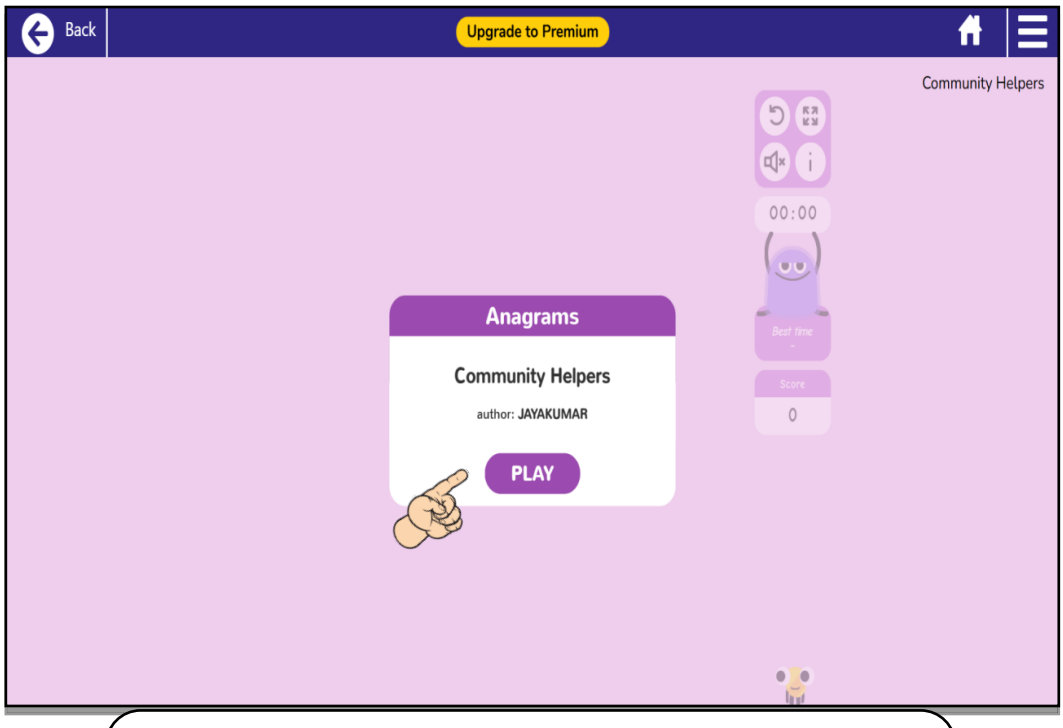
Mutiple Choice Game - ல் 30 வினாடிக்குள் விடையளிக்க வேண்டும். Mutiple Choice Game இது போன்று காணப்படும்.



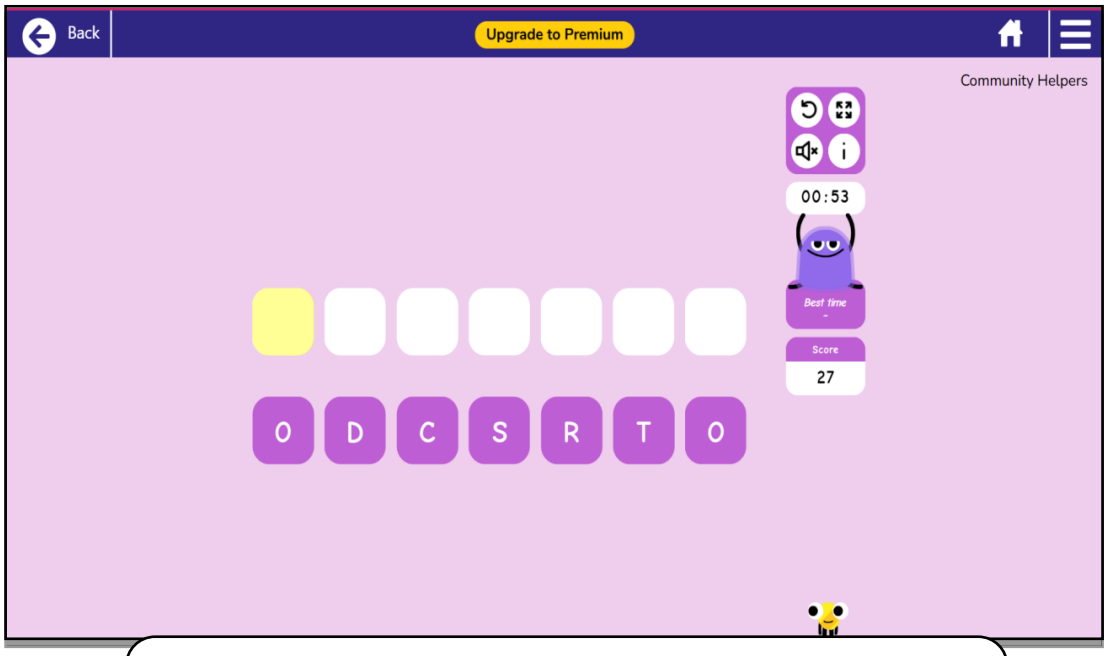
சமூக அறிவியல் பாடத்திற்கான Wordsearch Game மாணவர்கள் விளையாட துவங்கலாம்.



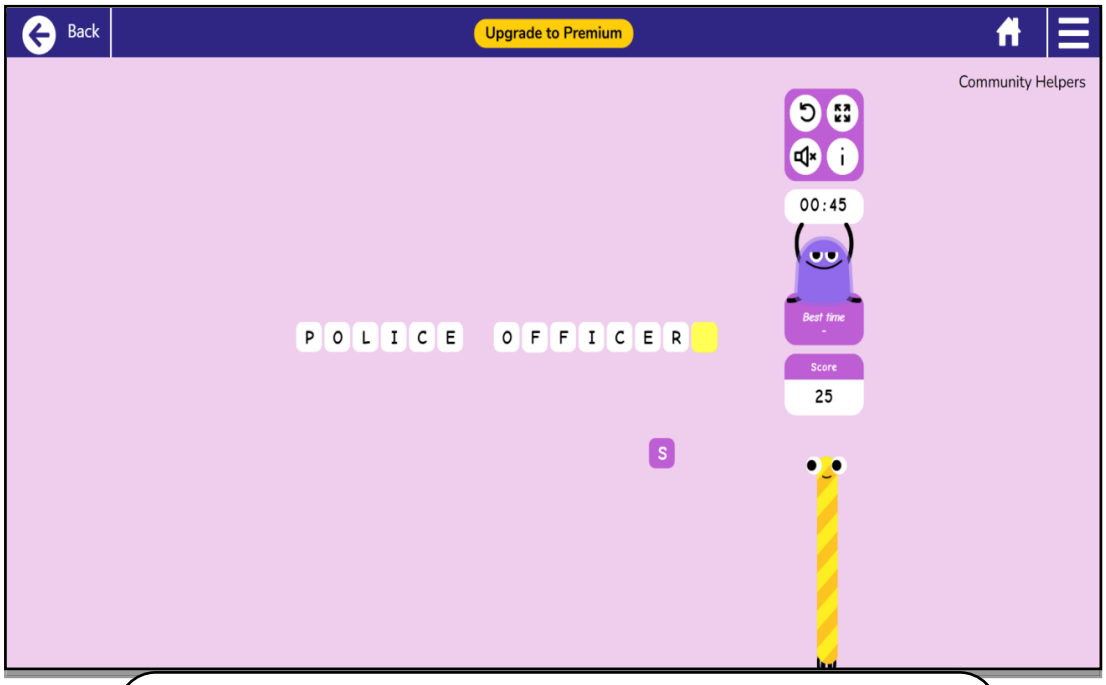
சமூக அறிவியல் பாடத்திற்கான Wordsearch Game - ல் words கண்டுபிடித்தவுடன் இது போன்று



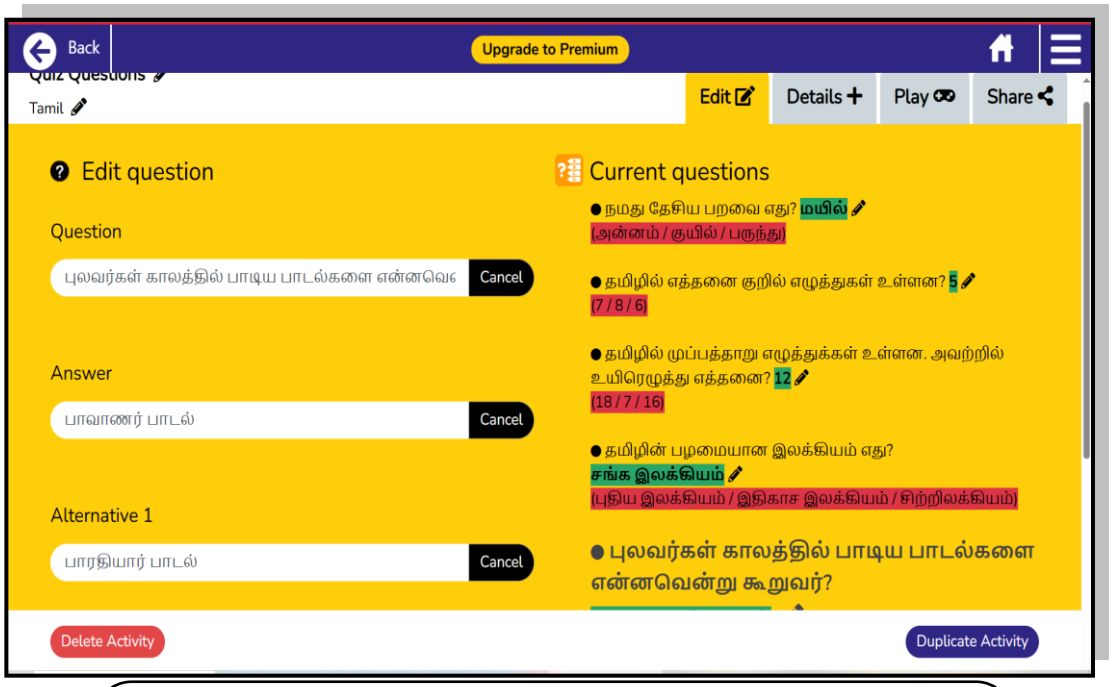
சமூக அறிவியல் பாடத்திற்கான Anagrams Game மாணவர்கள் விளையாட துவங்கலாம்.



சமூக அறிவியல் பாடத்திற்கான Anagrams Game இது போன்று காணப்படும்.

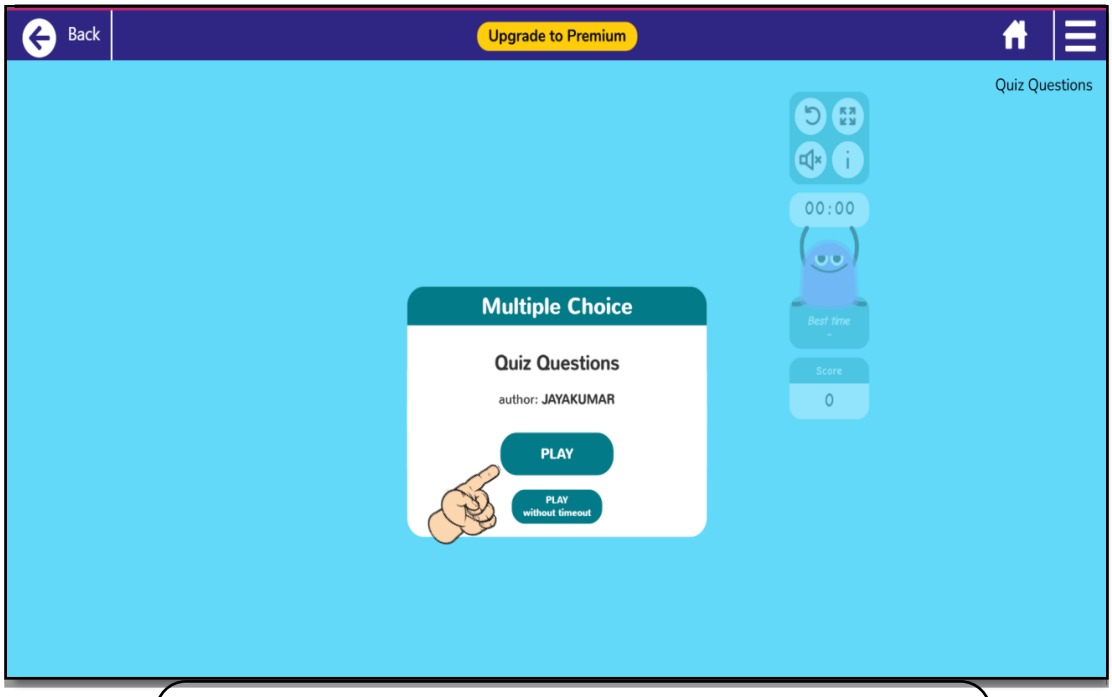


சமூக அறிவியல் பாடத்திற்கான Anagrams Game விளையாடி விடையளித்தவுடன் இது போன்று காணப்படும்.



தமிழ் மற்றும் கணக்கு பாடத்திற்கான Quiz Questions செயல்பாடுகள் உருவாக்கும் பகுதி இதுபோல் காணப்படும். இங்கே நாம் செயல்பாடுகளை உருவாக்க

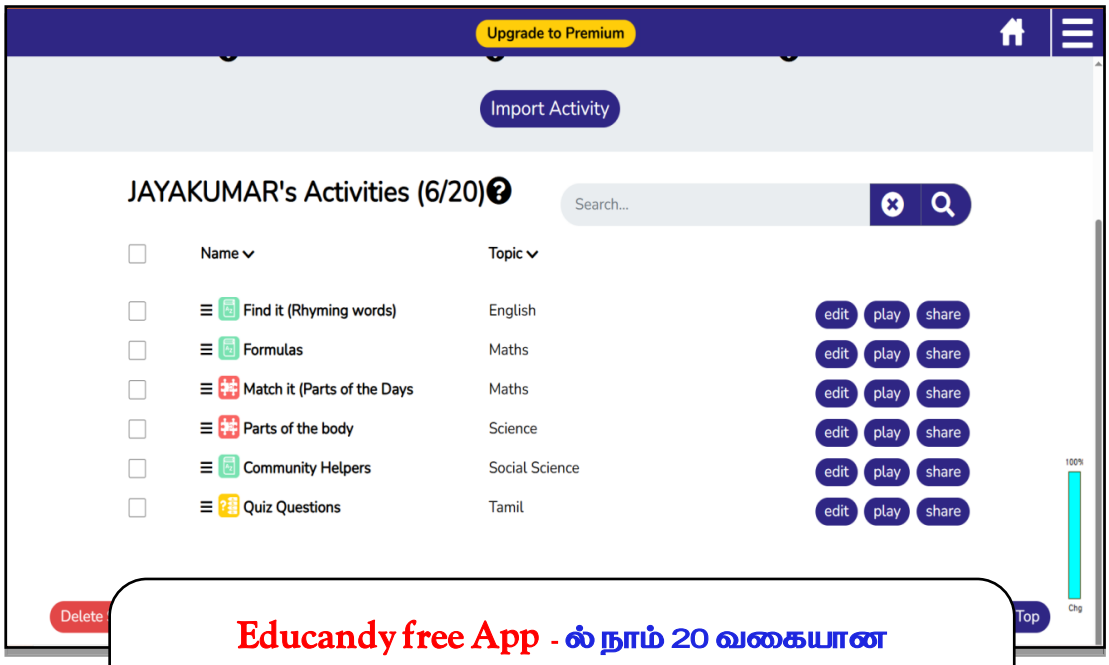
தமிழ் மற்றும் கணக்கு பாடத்திற்கான Quiz Questions செயல்பாடுகள் உருவாக்கும் போது தவறு ஏற்பட்டால் அதனை சரிசெய்ய Pen Icon – யை பயன்படுத்தி சரி செய்த பிறகு Update Question Option – யை Click செய்ய வேண்டும்.



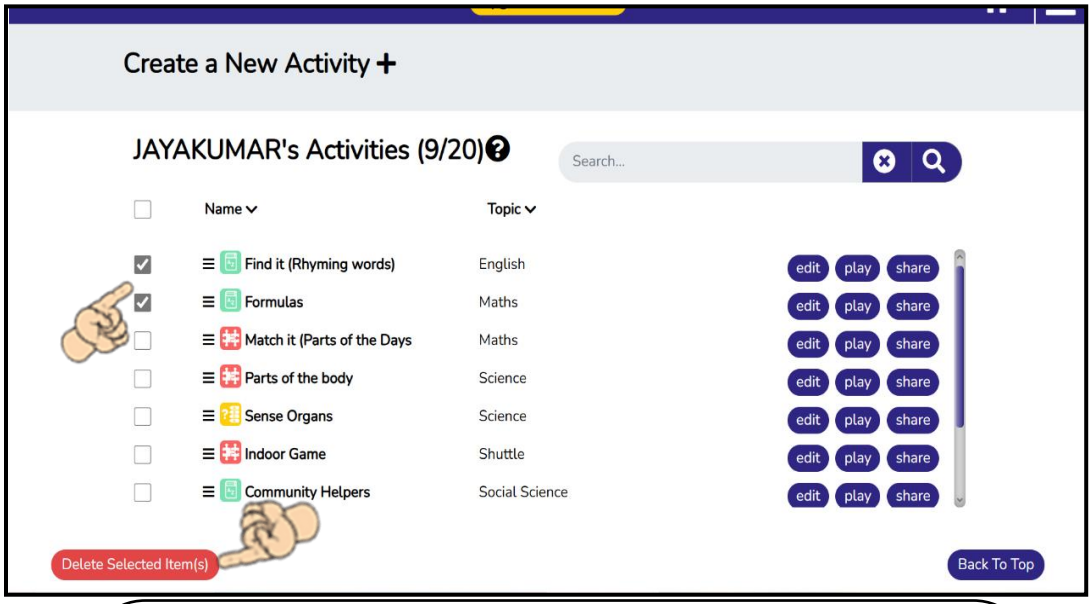
தமிழ் பாடத்திற்கான Multiple Choice Game

மாணவர்கள் விளையாட துவங்கலாம்.

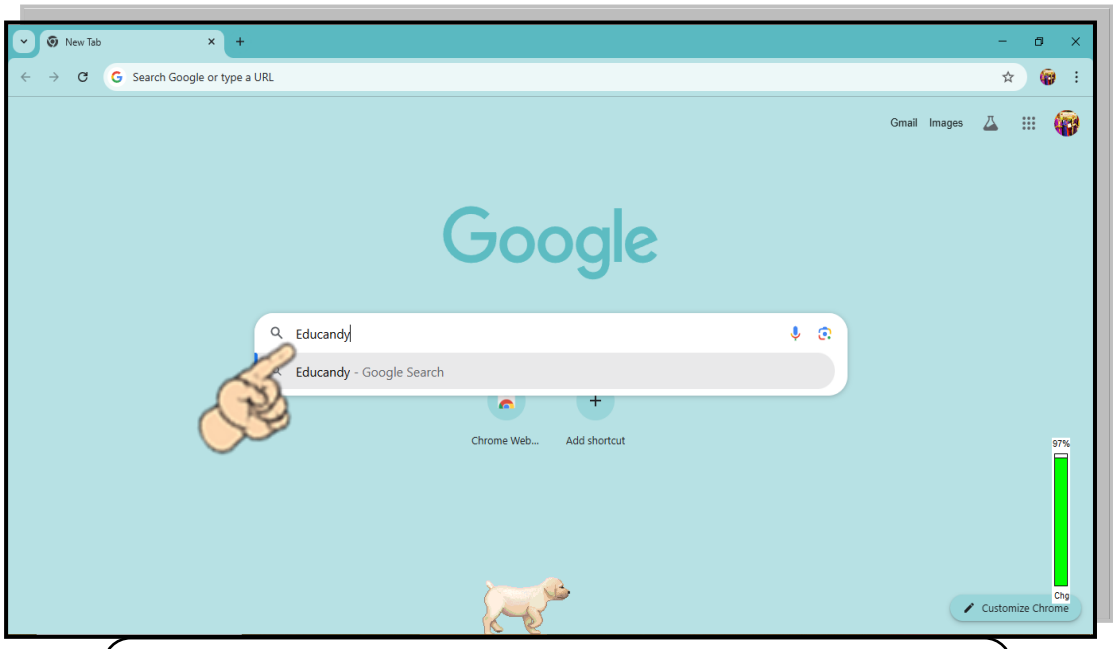
தமிழ் பாடத்திற்கான Multiple Choice Game - ல் 30 வினாடிக்குள் விடையளிக்க வேண்டும். Mutiple Choice Game இது போன்று காணப்படும்.



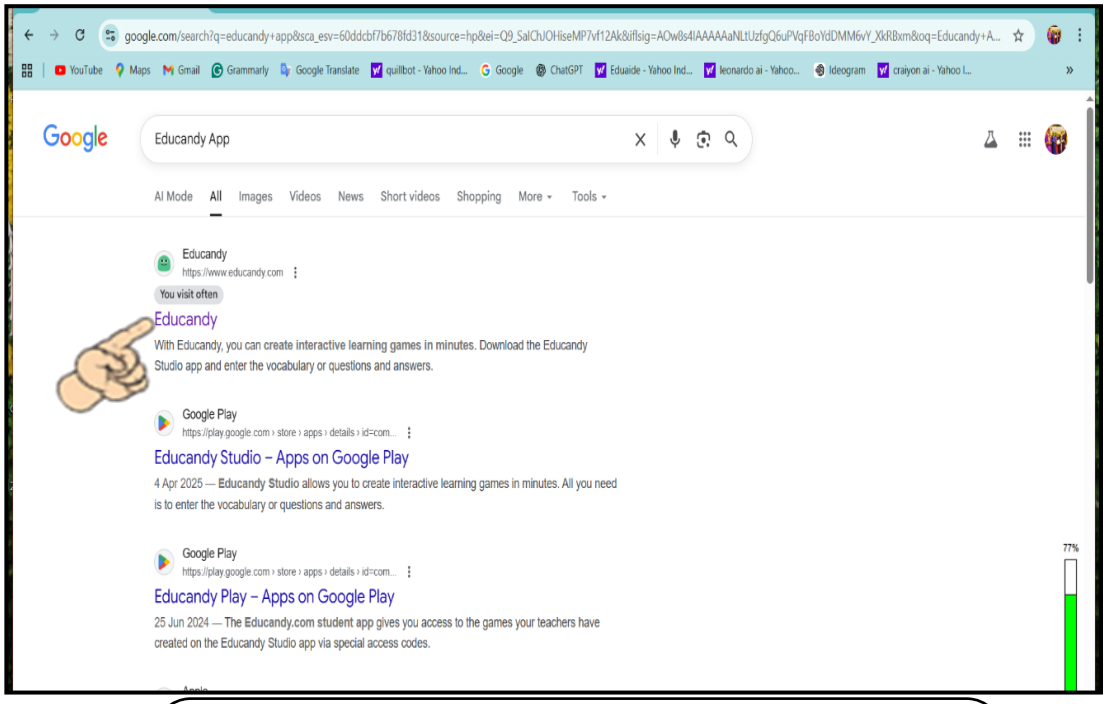
Educandy free App - ல் நாம் 20 வகையான செயல்பாடுகளை இலவசமாக உருவாக்கிக் கொள்ள முடியும்.



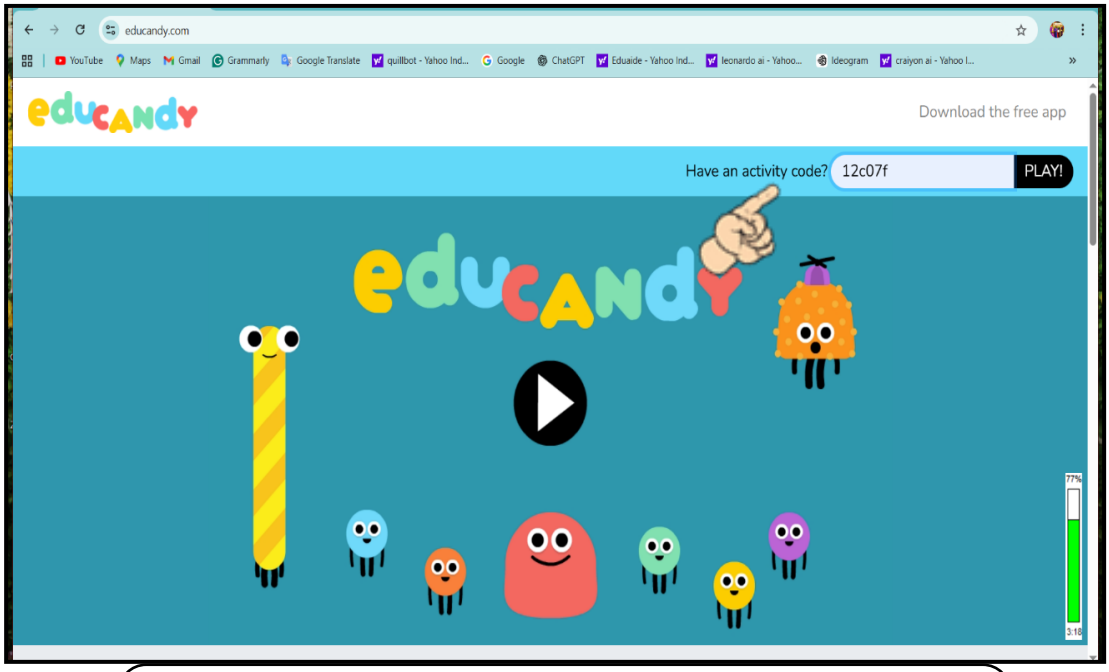
Educandy free App - ல் உள்ள 20 செயல்பாடுகளையும் மாணவர்கள் பயிற்சி செய்து முடித்தவுடன், அதனை Select செய்து Delete செய்துவிட்டு, மீண்டும் புதிய செயல்பாடுகளை உருவாக்கும் சிறப்பு இந்த App - ல் காணப்படுகிறது.



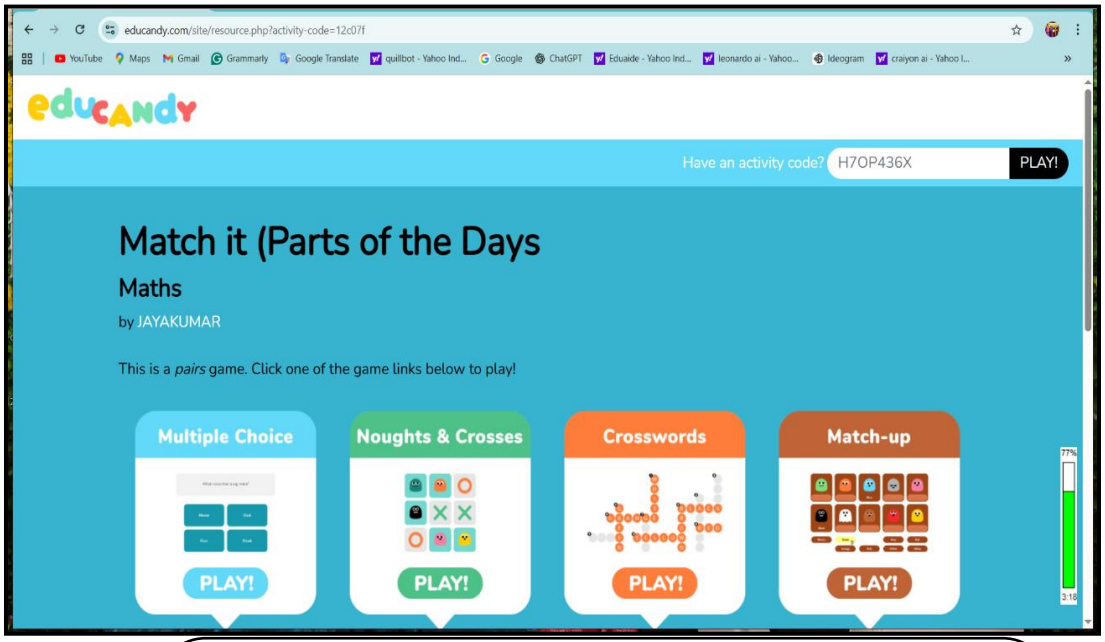
Google வலை தளத்திற்குள் சென்று Educandy App - யை தட்டச்சு செய்து உள் நுழைய வேண்டும்.



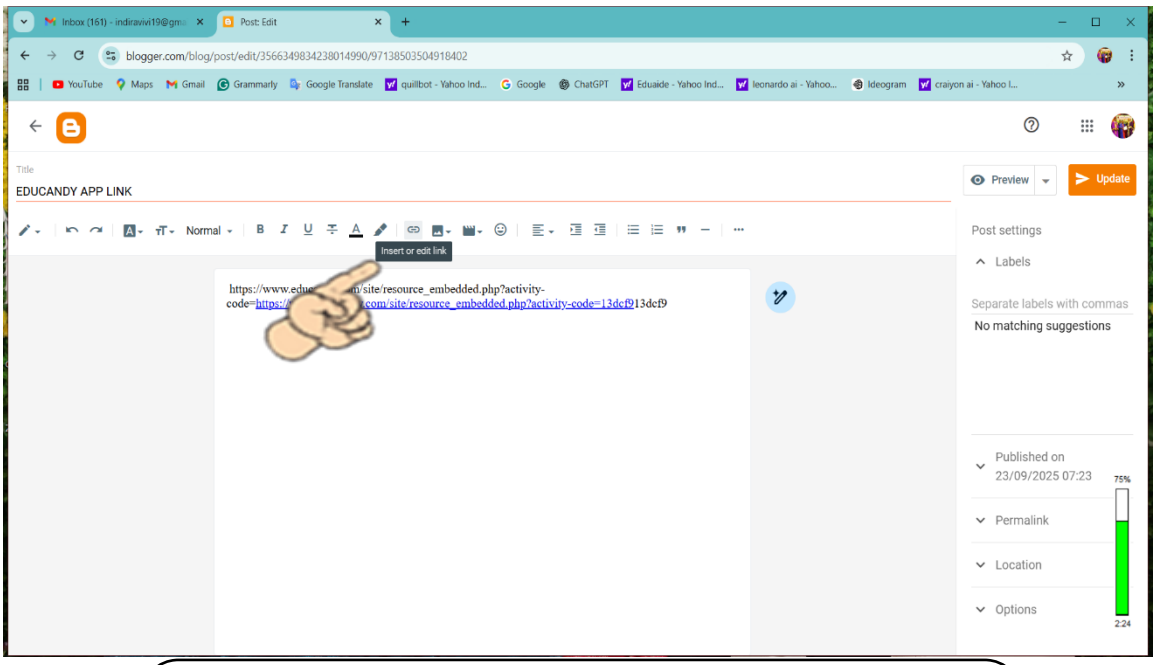
Google வலை தளத்திற்குள் சென்று Educandy App – யை தட்டச்சு செய்து உள் நுழைந்தவுடன் முதலில் உள்ள Educandy– யை Click செய்ய



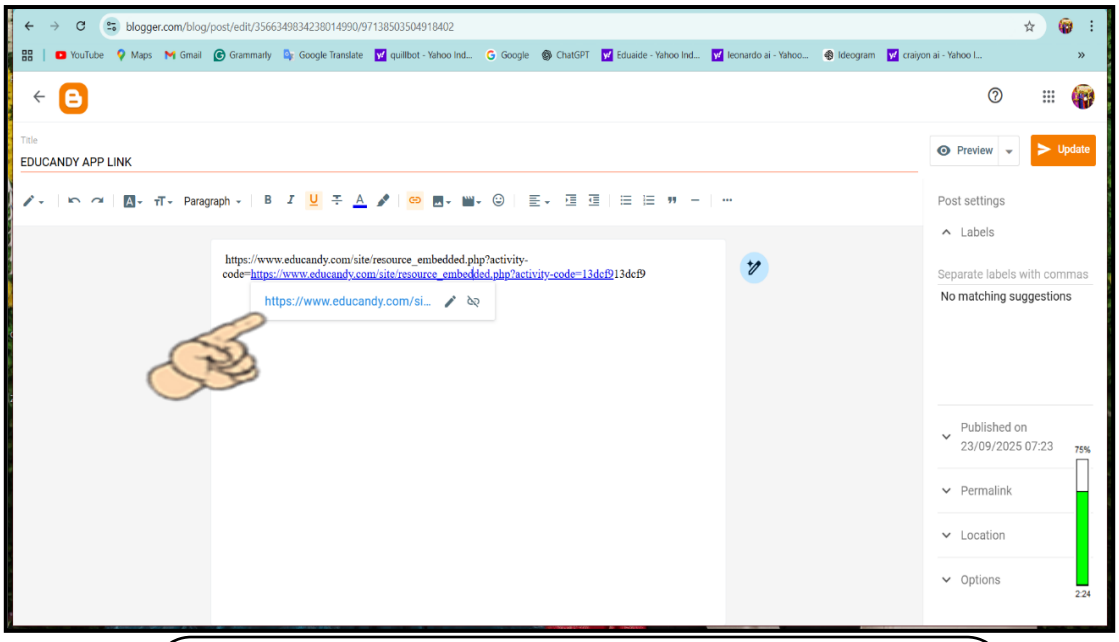
வலது புறத்தில் ஒரு Pop up Box இருக்கும். அங்கே சென்று Activity Code – யை உள்ளீடு செய்ய



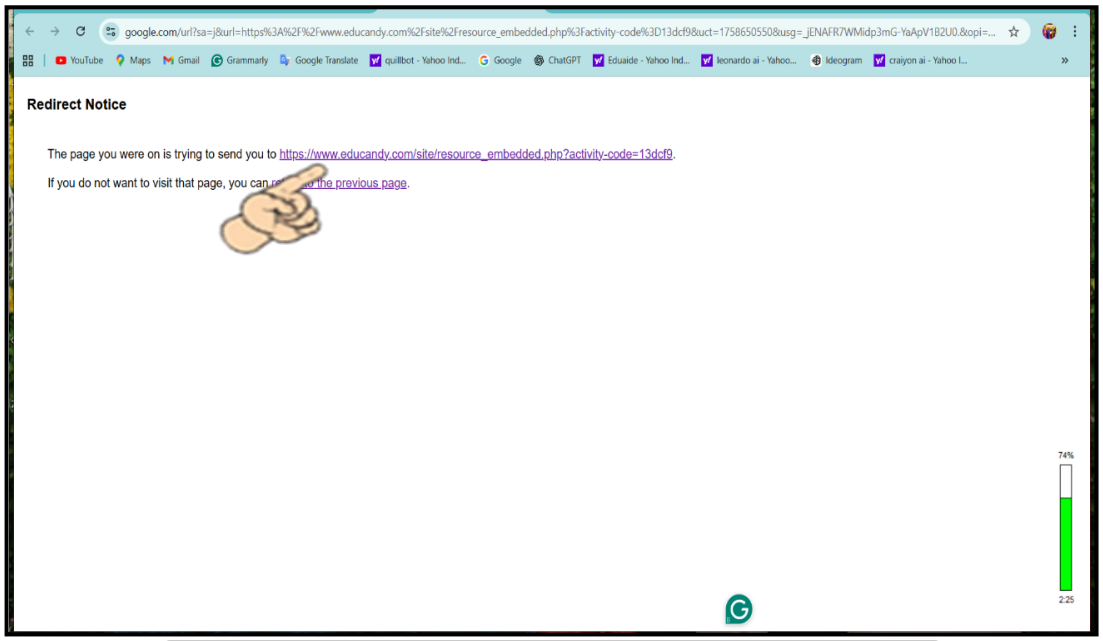
Activity Code – யை உள்ளீடு செய்தவுடன் இதுபோல் Game Open ஆகும். இப்போது விளையாட்டை விளையாட ஆரம்பிக்கலாம் . App – யை பதிவிறக்கம் செய்யாமலே Google உதவியுடன் விளையாடலாம்.



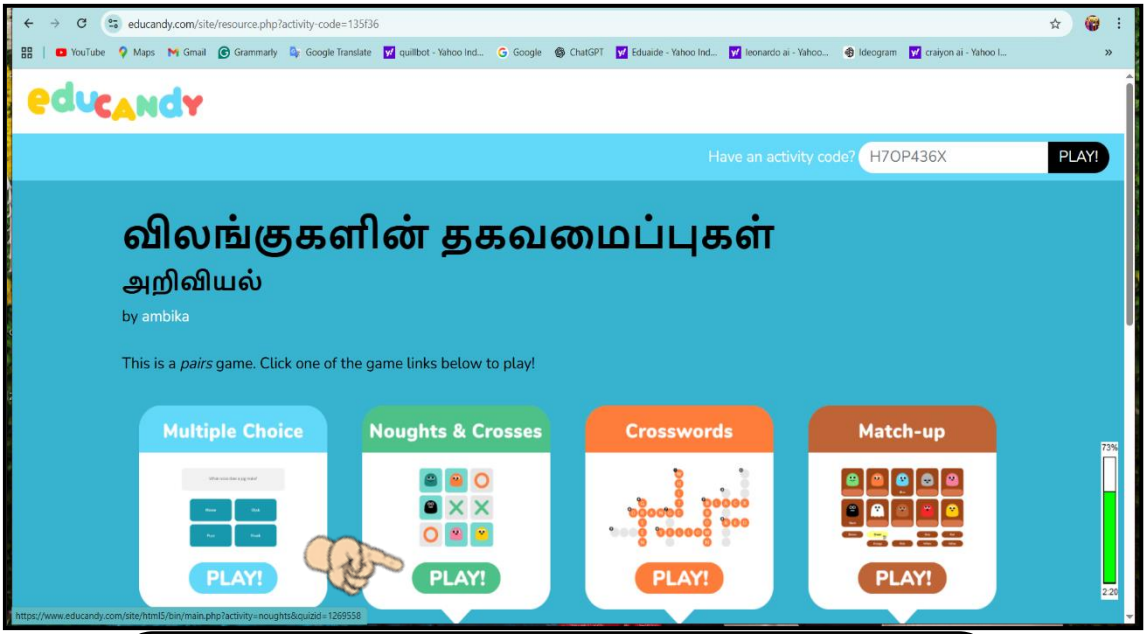
Blogs வலை தளத்திற்குள் சென்று Educandy லிங்க்கை Hyperlink செய்தால் இது போன்று link காணப்படும்.



Hyperlink செய்தவுடன் அவை Game Play பண்ண Educandy App link – யை மேலே உள்ளவாறு உருவாக்கி கொடுக்கும்.



Educandy App link – யை மேலே உள்ளவாறு Redirect Notice – ல் ஒரு லிங்க் இருக்கும். அதனை Click செய்தால் Game Open ஆகும்.



Educandy App Game Blogs – ல் இது போன்று Open ஆகும். மாணவர்கள் இந்த Game – யை Click செய்து விளையாடி மகிழலாம்.

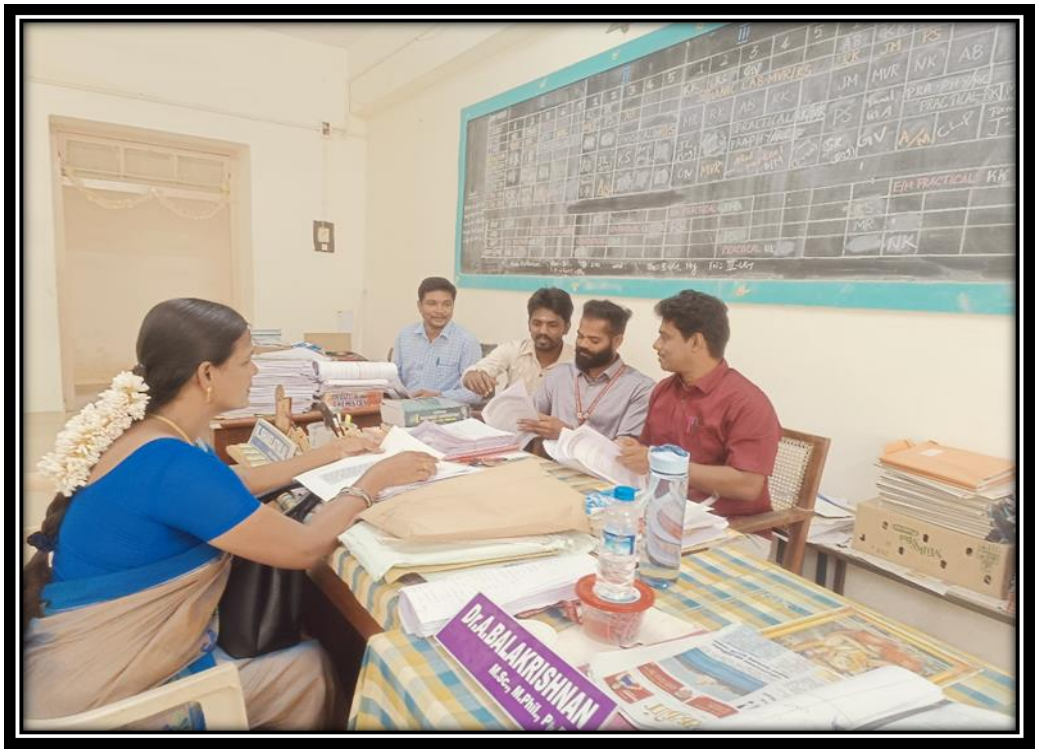
முடிவுரை

கற்றலை ஊடாடும் மற்றும் ஈடுபாட்டுடன் செய்ய விரும்பும் ஆசிரயர்களுக்கு Educandy ஒரு மதிப்புமிக்க கருவியாகும். சொல் சார்ந்த செயல்பாடுகள், பொருத்துதல் பயிற்சிகள் மற்றும் வினாடி வினாக்கள் உள்ளிட்ட பல்வேறு விளையாட்டு வடிவங்களுடன் இது வெவ்வேறு கற்றல் பணிகளை வழங்குகிறது. இந்த செயலி மாணவர்கள் எளிமையாக விளையாடவும், கற்றுக்கொள்ளவும் உதவியாக உள்ளது. ஆசிரியர்கள் செயல்பாடுகளை எளிதாக உருவாக்க உதவி செய்கிறது. மேலும் மாணவர்கள் வேடிக்கையான மற்றும் விளையாட்டு வழியில் கற்றலை கற்க முடியும்.

கருத்துக்கள் மற்றும் சொற்களஞ்சியத்தை வலுப்படுத்துவதில் Educandy சிறந்ததாக இருந்தாலும், முழுமையான கற்பித்தல் தீர்வாக இல்லாமல் ஒரு துணை கருவியாக இது சிறப்பாக செயல்படுகிறது. மாணவர்கள் Educandy App - யை பதிவிறக்கம் செய்யாமல் google வலைத்தளம், செயல்பாட்டு குறியீட்டு எண் மற்றும் Blogs போன்றவை மூலமும் விளையாடி மகிழும் ஒரு சிறப்பு அம்சம் இதில் உள்ளது. ஒட்டுமொத்தமாக, வகுப்பறையில் மாணவர் ஈடுபாட்டையும் ஊக்கத்தையும் மேம்படுத்த இது ஒரு பயனுள்ள மற்றும் சுவாரஸ்யமான முறையாகும்.

Photo Gallery

Tool Finalisation Workshop at Government Arts College, Dharmapuri



Module Preparation Workshop at Government Arts College, Dharmapuri

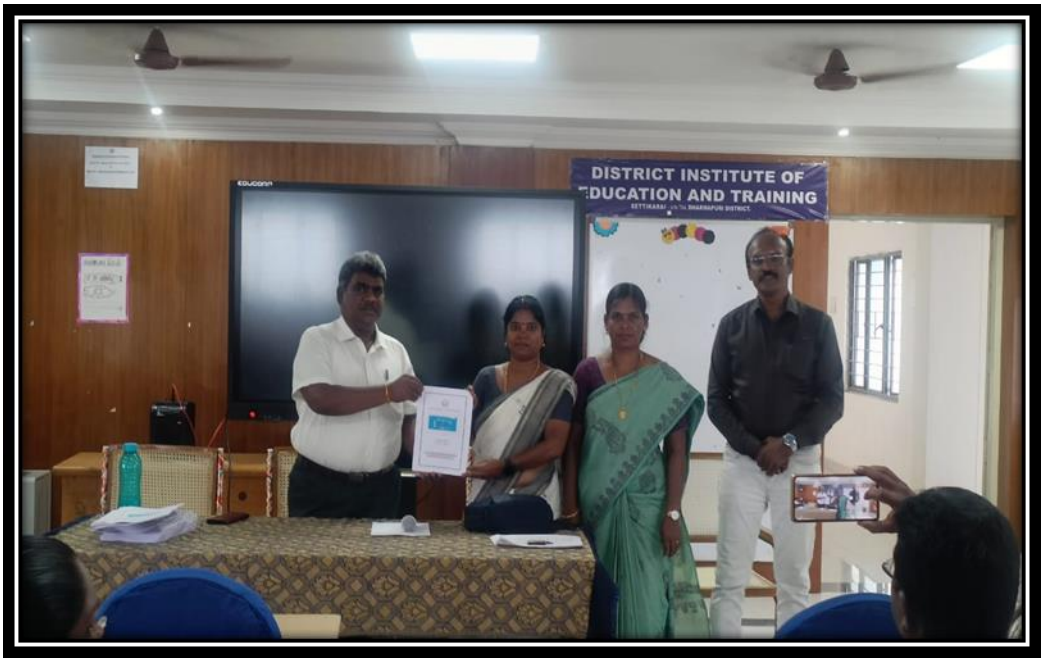
Dr.P.Govindaprakash, Principal, DIET explained about Research Process

Mr. Thanga Raja Expert demonstrated about Educandy App

Participants Downloaded the Educandy App

Doubts were clarified by Expert

Hands on Practice by Participants



Research Module was published by Dr.P.Govindaprakash, Principal,

DIET to Research Co-Ordinator

Research Module was published by Dr.P.Govindaprakash, Principal,

DIET to Participant

Research Module was published by Dr.P.Govindaprakash, Principal,

DIET to Participant

Research Module was received by all Participants

Research Module was received by all Participants

Dr N.Indira, Researcher monitored the progress in Schools

Dr N.Indira, Researcher monitored the progress in Schools

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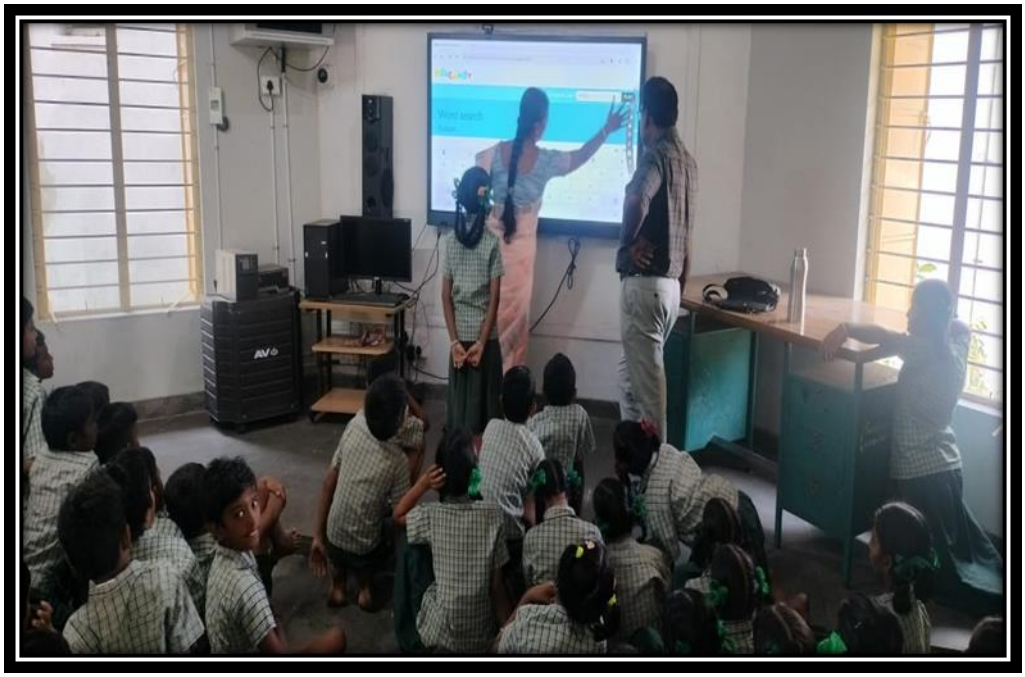


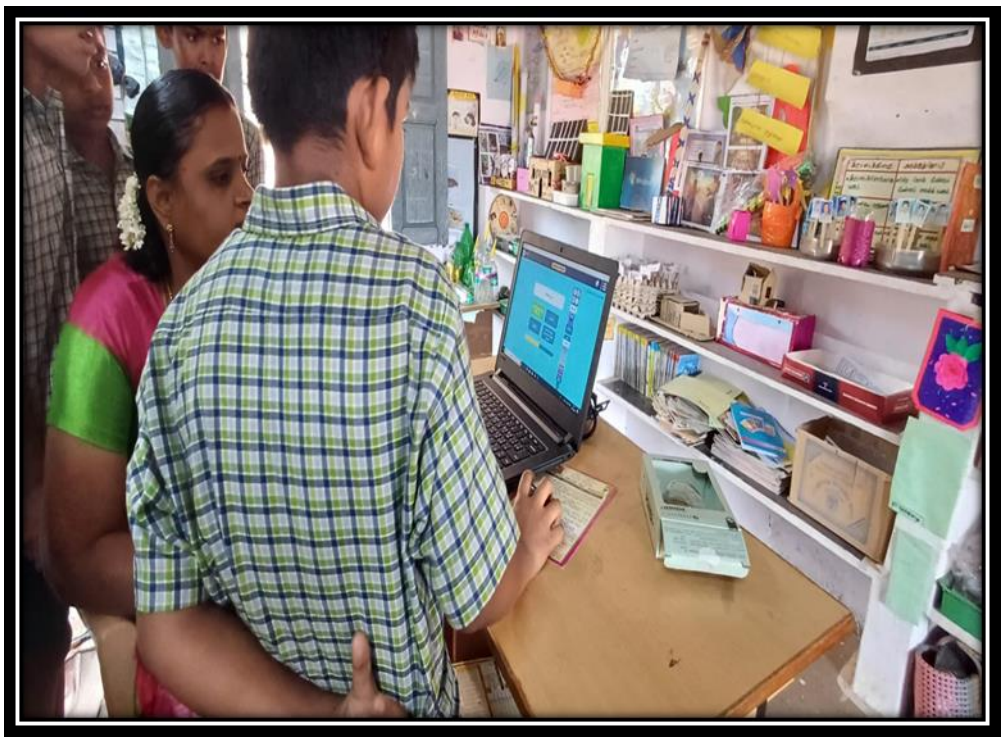
Dr N.Indira, Researcher monitored the progress in Schools

Dr N.Indira, Researcher monitored the progress in Schools

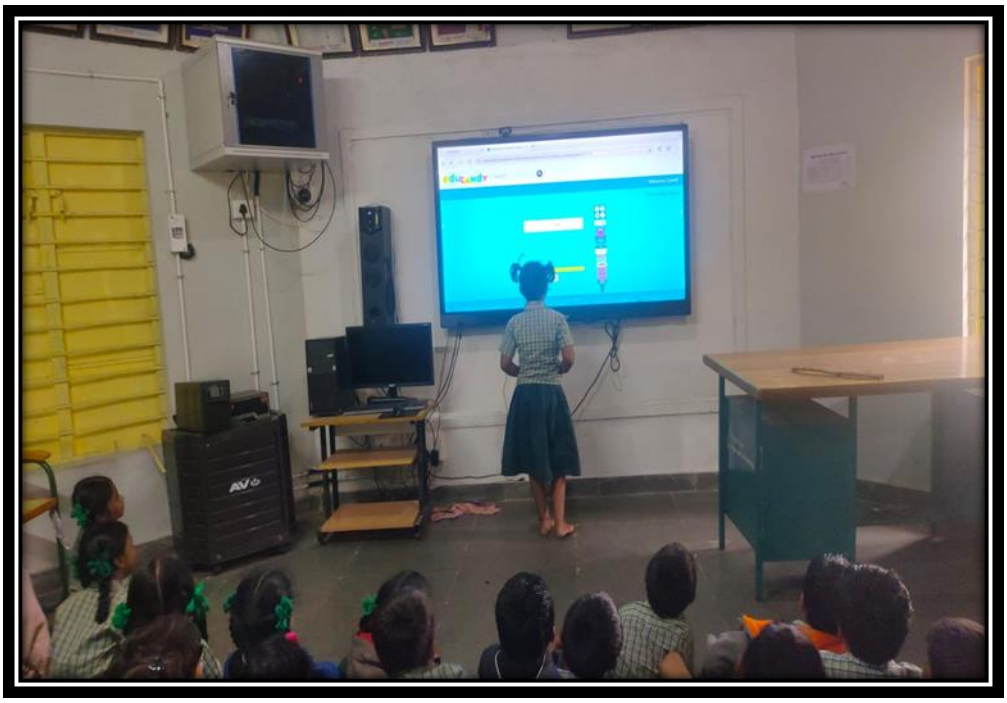
Dr N.Indira, Researcher monitored the progress in Schools

Hands on Practice by students in School in Smart Board

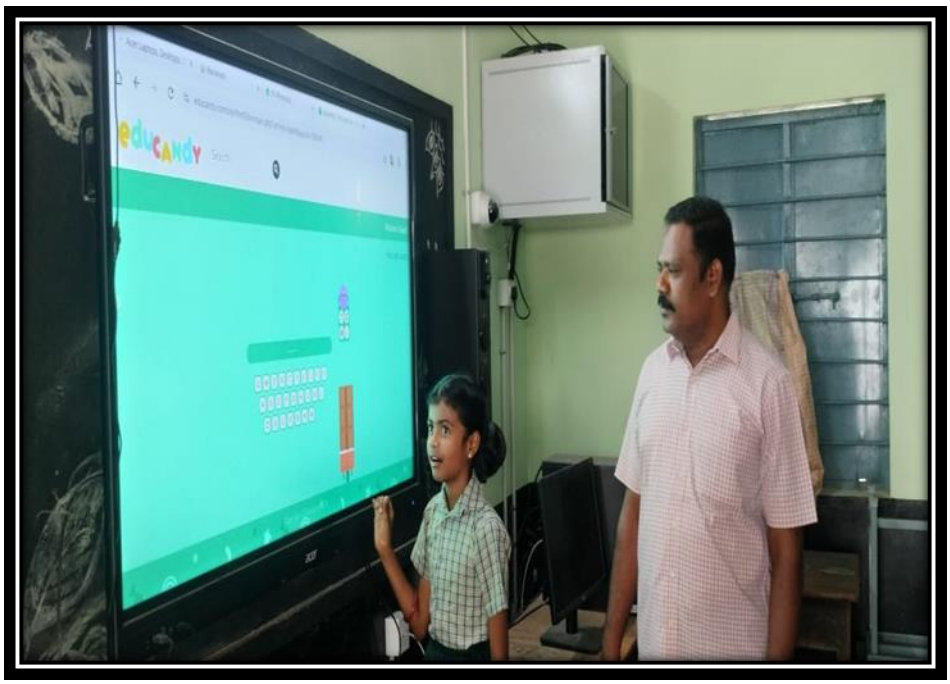
Hands on Practice by students in School in Tab



Hands on Practice by students in School in Laptop



Interactive games were used by students in classroom



Interactive games were used by students in classroom

Interactive games were used by students in classroom

Sample Assignments

Tamil Activities

1. https://www.educandy.com/site/resource.php?activity-code=1354f4
2. https://www.educandy.com/site/resource.php?activity-code=135433
3. https://www.educandy.com/site/resource.php?activity-code=1354ef
4. https://www.educandy.com/site/resource.php?activity-code=135500
5. https://www.educandy.com/site/resource.php?activity-code=135938
6. https://www.educandy.com/site/resource.php?activity-code=1356fe
7. https://www.educandy.com/site/resource.php?activity-code=13ac49
8. https://www.educandy.com/site/resource.php?activity-code=135905
9. https://www.educandy.com/site/resource.php?activity-code=13de66
10. https://www.educandy.com/site/resource.php?activity-code=13de67
11. https://www.educandy.com/site/resource.php?activity-code=13de6a
12. https://www.educandy.com/site/resource.php?activity-code=13de6d
13. https://www.educandy.com/site/resource.php?activity-code=13de6e
14. https://www.educandy.com/site/resource.php?activity-code=135938
15. https://www.educandy.com/site/resource.php?activity-code=1356fe
16. https://www.educandy.com/site/resource_embedded.php?activity-code=13dcf9

English Activities

1. https://www.educandy.com/site/resource.php?activity-code=1354d3
2. https://www.educandy.com/site/resource.php?activity-code=135429
3. https://www.educandy.com/site/resource.php?activity-code=135423
4. https://www.educandy.com/site/resource.php?activity-code=1354d2
5. https://www.educandy.com/site/resource.php?activity-code=13551e

6. https://www.educandy.com/site/resource.php?activity-code=135527

7. https://www.educandy.com/site/resource.php?activity-code=13553c

8. https://www.educandy.com/site/resource.php?activity-code=1355bd

9. https://www.educandy.com/site/resource.php?activity-code=1355bf

10. https://www.educandy.com/site/resource.php?activity-code=1355d5

11. https://www.educandy.com/site/resource_embedded.php?activity-code=136120

12. https://www.educandy.com/site/resource.php?activity-code=135be2

13. https://www.educandy.com/site/resource.php?activity-code=13553c

14. https://www.educandy.com/site/resource.php?activity-code=138e9a

15. https://www.educandy.com/site/resource.php?activity-code=13ac4c

16. https://www.educandy.com/site/resource.php?activity-code=13568c

17. https://www.educandy.com/site/resource.php?activity-code=1355dc

18. https://www.educandy.com/site/resource.php?activity-code=1355e2

19. https://www.educandy.com/site/resource_embedded.php?activity-code=135672

20. https://www.educandy.com/site/resource.php?activity-code=1354d1

21. https://www.educandy.com/site/resource.php?activity-code=13553c

22. https://www.educandy.com/site/resource_embedded.php?activity-code=135bba

23. https://www.educandy.com/site/resource.php?activity-code=135bdb

24. https://www.educandy.com/site/resource.php?activity-code=135bdd

25. https://www.educandy.com/site/resource.php?activity-code=135bde

26. https://www.educandy.com/site/resource.php?activity-code=136078

27. https://www.educandy.com/site/resource.php?activity-code=136079

28. https://www.educandy.com/site/resource_embedded.php?activity-code=1361e2

29. https://www.educandy.com/site/resource.php?activity-code=138eed

30. https://www.educandy.com/site/resource.php?activity-code=13ad03

31. https://www.educandy.com/site/resource.php?activity-code=13ac4d

Maths Activities

1. https://www.educandy.com/site/resource.php?activity-code=1354dd

2. https://www.educandy.com/site/resource.php?activity-code=1354d8

3. https://www.educandy.com/site/resource.php?activity-code=135514

4. https://www.educandy.com/site/resource.php?activity-code=135528

5. https://www.educandy.com/site/resource_embedded.php?activity-code=1356e8

6. https://www.educandy.com/site/resource.php?activity-code=13607c

7. https://www.educandy.com/site/resource.php?activity-code=13ac54

8. https://www.educandy.com/site/resource.php?activity-code=13ac58

9. https://www.educandy.com/site/resource_embedded.php?activity-code=13555e

10. https://www.educandy.com/site/resource.php?activity-code=138e9b

11. https://www.educandy.com/site/resource.php?activity-code=13e259

12. https://www.educandy.com/site/resource.php?activity-code=13e25a

13. https://www.educandy.com/site/resource.php?activity-code=13e25c

14. https://www.educandy.com/site/resource.php?activity-code=13e25d

15. https://www.educandy.com/site/resource.php?activity-code=135528

Science Activities

1. https://www.educandy.com/site/resource.php?activity-code=135518

2. https://www.educandy.com/site/resource.php?activity-code=135520

3. https://www.educandy.com/site/resource.php?activity-code=13551f

4. https://www.educandy.com/site/resource.php?activity-code=13552f

5. https://www.educandy.com/site/resource.php?activity-code=135536

6. https://www.educandy.com/site/resource.php?activity-code=135f36

7. https://www.educandy.com/site/resource.php?activity-code=1355e0

8. https://www.educandy.com/site/resource_embedded.php?activity-code=135bca

9. https://www.educandy.com/site/resource.php?activity-code=13e25d

10. https://www.educandy.com/site/resource_embedded.php?activity-code=135f13

11. https://www.educandy.com/site/resource.php?activity-code=1356fe

12. https://www.educandy.com/site/resource.php?activity-code=13e13c

13. https://www.educandy.com/site/resource.php?activity-code=13e141

Social Science Activities

1. https://www.educandy.com/site/resource.php?activity-code=135515

2. https://www.educandy.com/site/resource.php?activity-code=136080

3. https://www.educandy.com/site/resource.php?activity-code=1355cb

4. https://www.educandy.com/site/resource_embedded.php?activity-code=135bc1

5. https://www.educandy.com/site/resource.php?activity-code=136080

6. https://www.educandy.com/site/resource.php?activity-code=135515

7. https://www.educandy.com/site/resource.php?activity-code=13e143

8. https://www.educandy.com/site/resource.php?activity-code=13e144

OBSERVATION FORMAT FOR DEVELOPING INTERACTIVE GAMES FOR CLASSROOM TRANSACTIONS

Title: Developing Interactive Games for Classroom Transactions

Researcher Name: _____

Date: _____

School: _____

Class/Grade: _____

Subject: _____

Teacher: _____

Educandy App Activity Title / Activity Used: _____

Observation Items

S.No.	Observation Indicators	Yes (1)	No (0)
1	The student shows interest when the Educandy activity begins.		
2	The student listens attentively to the teacher's instructions.		
3	The student actively participates in the Educandy game.		
4	The student follows the rules of the game correctly.		
5	The student interacts collaboratively with peers during the activity.		
6	The student demonstrates understanding of the subject content through the game.		
7	The student responds quickly and appropriately during the activity.		
8	The student is able to recall information presented through the game.		
9	The student shows enthusiasm or enjoyment while playing the game.		
10	The student completes the activity within the given time.		