

Role of Animated and Interactive Contents in KIDS Teaching

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Abstract—

A picture is worth a thousand words. Multimedia teaching materials have been widely adopted by teachers in Physics, Biotechnology, Psychology, Religion, Analytical Science, and Economics nowadays. To assist with engaging students in their economic study, increase learning efficiency and understanding, solve misconception problems, encourage in class discussion, and increase final performance for students. Some animations and cartoons are developed to explain basic concept and theories for the students at beginning level as well as advanced level.

Utilization of these resources can improve learning efficiency, help students in their understanding and long-term memory of the subject, engage students in their studies, and increase interest in undertaking

The results of this study could be used in any subject, as well as for self-study by Economics students and others. As part of the Teaching and Learning Project, these materials are capable of being further used in mobile applications to assist in engaging students in their learning.

Keywords--Teaching, Animation, Cartoon, Self study

1. METHODOLOGY –

Cartoons and animations were designed and developed after surveying need and requirement of students and teachers to solve the major misconception and misunderstanding problems. Qualitative interviews were conducted to collect

feedbacks for the cartoons developed for this project from economic lecturers, tutors, students and other teachers and students.

Learning efficiencies from animations and text materials are also compared by the

length of learning time in this paper. Findings – Surveys in this study support the view that different students have different preferred learning methods.

The animated cartoons developed in this research received strong positive feedbacks from peer colleagues in kids teaching at primary and junior level, Utilization of these resources can improve learning efficiency, help students in their understanding and long term memory of the subject, engage students in their studies, and increase interest in undertaking studies amongst all other students.

2. INTRODUCTION

Animated cartoons have been adopted by many teachers as an alternative or supplement to

traditional teaching methods (Becker et al. 2006; O'Day 2007). It is commonly said that a picture

is worth a thousand words. Animated cartoons are being adopted by an increasing number of

teachers in physics (Halpern 2007), biotechnology (Heyden 2004; McClean et al. 2005; O'Day 2006), psychology (Eaton & Uskul 2004; Brown & Logan 2005), religion (Pinsky 2001), Analytical science (Larive

2008), and economics (Hall 2005; Becker et al. 2006; Klein & Bauman 2010; Luccasen and Thomas 2010). To help engage students in their study, animated cartoons are adopted or developed to explain basic concepts. The developed materials can be embedded into any lecture to illustrate basic concepts. They can also help with the self-study process of any student who is interested in a subject study but has no background in a particular subject.

conducted in the beginning of the project to

3. LITERATURE REVIEW

There are numerous theories and much research related to learning studies, including behaviorist research, cognitive research, experiential learning, humanistic research and social learning. Martyn Stewart (2011) has highlighted the major contributors, and has argued that learning is a complex process that includes both mentally cognitive and emotional affective factors from social and individual perspectives. Lewin (1948) and Kolb (1984) have agreed that active experience can

help in a cycle-of-learning process. The efficacy of “chalk and talk” learning (Becker et al. 2006)

fades a bit more each year in an age of digital media and students raised in an nursery filled with electronics (Lave & Wenger 1991). Teaching, therefore, should be a clear, interactive and supported process with well-prepared and well-structured materials,

Cartoons and animations can help students cross language barriers in their first-year studies and learn concepts correctly and consistently (Sweller 1994; Akamca et al. 2009). Connor (2009) found that cartoons help students who have difficulty in quickly processing large tracts of written text or dialogues, and increase both learning efficiency and students'

interest in learning. This, in turn, has a positive influence on students' achievements (Akamca et al. 2009).

Different

illustrations and explanations by different teachers may vary the quality of the results. Even when explained by the same teacher, a given animation may have different influences on different students (e.g., on students of different genders) (O'Day 2010).

Educational papers have suggested that students' attention declines in the first 10 to 15 minutes of a lecture (Wilson & Korn 2007). Therefore, animations and cartoons should be used to attract students' attention, as well as to engage students in their economic studies. A combination of different methods can help refresh students and attract their attention.

The static cartoons are obviously limited in their ability to show changes or scenarios with movement.

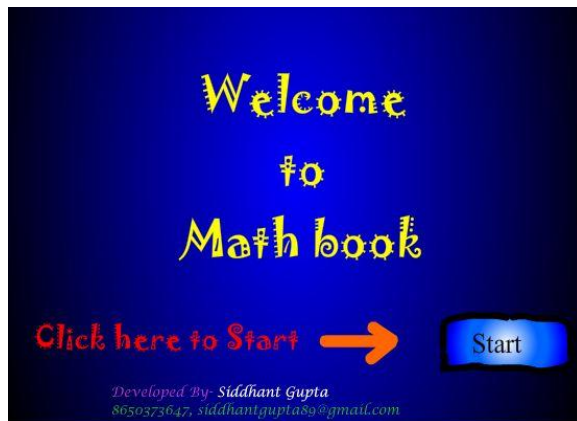
Developing animations for teaching is not a simple task; it is very time-consuming, partly due to its association with new technologies (Heyden 2004).

4. ANIMATIONS FOR SURVEY

The project is designed to help students increase their learning efficiency and subject understanding. For this studies two Animated interactive applications were created

- 1- Students ranging from 3 to 5 yrs studying in Nursery and Kinder garden classes.
- 2- Students ranging from 10 to 13 yrs studying in Junior classes.

For first category a book of mathematics was animated name Math for Kids



This a Flash application which teach the kids normal mathematical operations.



This application give two option one for practice and another for Exercise.



In practice mode user students choose the operation he/ she wants to learn.



In all options user need to enter values in input and got the output.



In exercise user do the exercises on all operations if they enter right answer they are awarded 20 marks for each question and a congratulation screen appear.



If a kid enter wrong answer he dont get any mark and a warning screen appear.



Here a retry option is also given but an user may give max 4 wrong answers.

This application was tried in a Nursery class of 30 students in St Mira academy, Moradabad, UP. The whole class was divided into three groups of 10 each. One group was taught with this application and other group was taught in traditional way. 10 students were taught in both the way. Following table give the summary of study output:

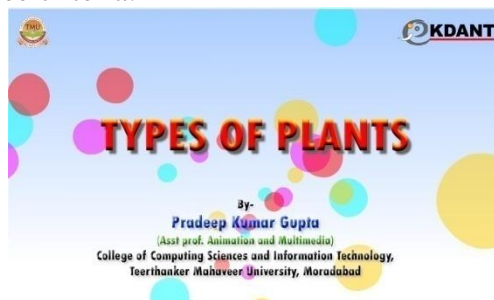
| S No | Group detail | Score <40% | Score Between 40 - 70% | Score abobe 70% |
|------|--|------------|------------------------|-----------------|
| 1 | Students taught only with Application | 3 | 5 | 2 |
| 2 | Students taught Without Application | 6 | 4 | 0 |
| 3 | Application as aid to traditional teaching | 1 | 3 | 6 |

SUMMARY REPORT OF STUDY -1

For second category an application on a science topic "TYPES OF PLANTS" was created to teach students of Junior classes.

This survey was performed on students of class 8th in St Mira Academy on 30 normal students and 5 slow learning students. Beside these 2 Dislexia students were also included in the survey.

The application for this survey covered a chapter of Class 8 science. The chapter includes type of the plants on the basis of three criteria:



TYPES OF PLANTS

Plant world shows a large variety of shapes and structure on the basis of their construction and habitat. Millions of species of the plants have been discovered so far and many are needed to be explored in future. These plant species may be categorized into various groups on the basis of following criteria:

- A- Type of the plants according to their size.
- B- Type of the plants according to their age.
- C- Type of the plants according to their Habitat.

Type of the plants according to their size

TREES

Trees are identified by their woody, long and strong TRUNK. They are woody and have a long life. some trees live for thousands of years such as Banyan, some trees are branched such as Mango while some are unbranched for ex Coconut and Papaya

HOME

Type of the plants according to their size

On the basis of their size plants may be divided into three categories:

A- Herbs

HOME

B- Shrubs

C- Trees

Type of the plants according to their Habitat

Plants show a great variations in their structure form and functioning on the basis of their living place referred as their HABITAT. On this ground plants are divided in to following categories:

| | |
|-------------|--------------|
| HYDROPHYTES | XEROPHYTE |
| MESOPHYTES | SAPRO PHYTES |
| LITHOPHYTES | PARASITES |
| EPIPHYTES | HALOPHYTES |
| SCIOPHYTES | HELIOPHYTES |

Type of the plants according to their size

HERBS

Herbs are soft green plants without any woody structure. they are annual or bi annual plants. They may be erect such as **Mint & Coriender** or they may be climber such as **Money Plant** or may be creeper such as **Pumpkin & Water Melon.**

Mint

Coriender

Money Plant

Pumpkin

Water Melon

Type of the plants according to their age

On the basis of their age plants may be divided into three categories:

A- Annual

Annual plants complete their life cycle in one year, they are soft and herbacious in nature
 Example- Dahlia, Marigold, Spinach, Carrot, Cabbage, Tomato, Potato, Wheat, Rice etc

HOME

B- Perenial

Perenial plants live for 2 or more years. Their body is hard, woody and branched. All tree and shrubs belongs to this category.
 Example: Rose, Mango, Coconut, Neem, Banana etc.

C- Ephemerals

Ephemerals are very short lived plants, they grow in a particular climate at very particular time and complete their life cycle in very small span of time. Ex: Orchids

Type of the plants according to their size

SHRUBS

Shrubs are profusely branched woody plants. Their stem divide into many branches just above the ground so a prominent long trunk is lacking in shrubs. shrubs are perenial and complete their life cycle in several years. for ex. **Rose, Jasmine, Bouganvillea**

Rose

Jasmine

Next

In each criteria there are different groups of plants with their characteristic features. The application is of audio visual type with animation.

Students of class eight divided into different groups, first group was taught in traditional classroom teaching, second was given animated and interactive content and third group was taught in traditional

classroom but assisted by animated content. Beside these groups of the student some poor performance students and 2 students with Dyslexia were also included in survey, the results of the study are amazing and enthusiastic following is the summary sheet of the output of survey.

SUMMARY REPORT OF STUDY -2

| S No | Group detail | Score <40% | Score Between 40 - 70% | Score above 70% |
|------|--|------------|------------------------|-----------------|
| 1 | Students taught only with Application | 3 | 5 | 2 |
| 2 | Students taught Without Application | 6 | 4 | 0 |
| 3 | Application as aid to traditional teaching | 1 | 3 | 6 |
| 4 | Slow Learners(5) | 1 | 4 | - |
| 5 | Dyslexia students(2) | 1 | 1 | - |

.Conclusions

First-year students face problems in their studies due to the many complex concepts and long text examples involved. There is a pressing need for new teaching materials which can assist in helping these students in their learning as well as engaging them more strongly in their studies. Animated cartoons are an effective alternative method for teaching basic and advanced concepts. However, current studies in adopting cartoons in teaching are limited by the quantity and quality of cartoons that could

be used to illustrate concepts or linked with case studies.

The new animated and interactive teaching material developed in this study for teaching both basic and advanced subjects have received very positive feedback and many favourable comments from teachers and students. Used as an adjunct to teaching, the animations are expected to increase both learning efficiency and students' understanding of different subjects, to engage students in the study and to remedy mis-conceptions. These materials may have a positive influence on the final performance of all students, and also for slow learners and students with dyslexia.

5. REFERENCES

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