

## Demonstration of Interactive Multimedia Packages and Learning Objects for school students

Vasudha Kamat, CIET, NCERT, New Delhi, India ([vasudhak2000@rediffmail.com](mailto:vasudhak2000@rediffmail.com)),  
Jayashree Shinde, SNDT Women's University, Mumbai, India ([jssndt@rediffmail.com](mailto:jssndt@rediffmail.com))

### INTRODUCTION:

Department of Educational Technology (DET) of SNDT Women's University, Mumbai, India is a pioneering institution in the use of ICT in education. As a teaching department it offers a Master level programme (2 years – 4 semesters- full time) in Instructional Design. It conducts training for the teachers in development of Educational Interactive Multimedia Packages (IIMPs).

DET has been developing Interactive Multimedia Packages-IIMP in various school subjects in Regional Language Marathi. DET developed 30 IIMPs of 1 hour duration (reading time) for grade V to VII in the year 2001-03. The packages were widely used in Marathi medium schools as they very interactive and IIMP was a new area for the teachers in elementary schools.

### Interactive Multimedia Packages

DET got a new project sponsored by Maharashtra Knowledge Corporation Ltd. to develop 100 IIMPs in school subjects for grade I to IX. As a part of this project 48 IIMPs were developed for Grade I to IV in various school subjects. Table 1 presents the titles.

**Table 1: Gradewise and subjectwise titles of the IIMPs**

Grade	Marathi	Mathematics	EVS	History	Science	Geography
I	Word and Pictres	Addition	Occupations	-	-	-
	Vowels	Subtraction	Our Home			
	Consonents	SubtractionII	Our cloths			
II	Verbs	Addition	Our earth	-	-	-
	Suffixes	Games on Addition	Sky			
		Subtraction	Shapes and Figures	Means of transport		
III	Pre-fixes	Clock-reading	-	Stone age Man	Our Body	Direction, Star and Planets

	Combined words	Multiplication Division Fractions		New Stone Age	Food Shelter Body parts of Living Things	Map Reading Transport & Communication
IV	Dictionary of words  Types of words  Sentence construction  Language games	Fractions  Decimal fractions  Measurement of Time  Geometric shapes	-	National symbols	Work and Energy  Internal Organs & Digestion  Properties of Matter	(Maharashtra State) Konkan Region  Plateau Region  Sahyadri
Total	11	15	6	3	7	6

These packages are based on the identified concepts, procedures in the respective curriculum. The IIMPs are developed using text, graphics, animations, sound as well as videos (wherever required). The total reading time for each package is about one hour. Each individual learner takes time according to his/her pace. The package reading time is 1 hour. Since these are grade I to IV learners, the packages have audio for all the text used in the same.



Fig. 1 Character in an IIMP



Fig. 2 Cartoons and Animations in games

The most important feature of these IIMPs is Interactivity. The learner is required to be active through out the process of learning. Clicking, drag and drop, painting, matching the items, playing games (where the learner is required to score high), typing etc. are some of the activities used for interactivity.

During learning, many learning exercises are planned which asks for learner participation. Many formative testing exercises are also planned so that the learner could get to know his/her progress through the feedback provided.



Fig. 3 Boy climbing up at every right answer



Fig. 4 Exercises based on visuals

Feedback is also provided in various novel ways. Showing whether the response is correct or not correct (using the smilies) becomes monotonous. Hence many other interesting ways of giving feedback, appreciating learner success were used. Giving score to the correct answer was used only minimally. Many a times it was an award in the form of objects like a balloon, candy, kite, flowers etc. which was enjoyed by the learners. Though this was an extrinsic award, children of 6 to 10 age group enjoyed it and worked hard to achieve these awards. Apart from these awards in terms of the objects, sometimes the learner was requested to help a character (or agent) in the package to solve his/her problem and get appreciated. For example, "pl help the boy who has got stranded on the merry-go-round. If you give correct answer it will help him to come down." The child makes it sure to help the boy. Many such ideas are used for appreciating the involvement of the learner.



Fig. 5 Stars as reward



Fig. 6 Dancing clocks after matching correct pairs

It is found that the learners of all ages (the packages are developed for grade I to IX) enjoy interactivity and the way the feedback is provided. They say that they love this interactivity as they can try on their own and even if they go wrong, there is no one to scold them. They can take their own time and do not have to pace with others in the class. Children both from Urban metropolitan city as well as hilly area of rural Maharashtra have enjoyed the packages equally.

We therefore plan to demonstrate some of these ideas in PCF5. A digital library of about 500 different ideas for interactivity is prepared from these packages. Each frame of the package has interactivity and to break the monotony, the Instructional Designer was required to be innovative.

Apart from these learning packages, the DET also develops Awareness packages. For example, a package on Plastics and environment is developed for grade VI and VII. This is not very interactive as the purpose is to show it module by module to a big group (about 40 learners) and then ask them questions on the gain in knowledge. Department has developed this package in 3 languages including English.



Fig. 7 Recycling cycle

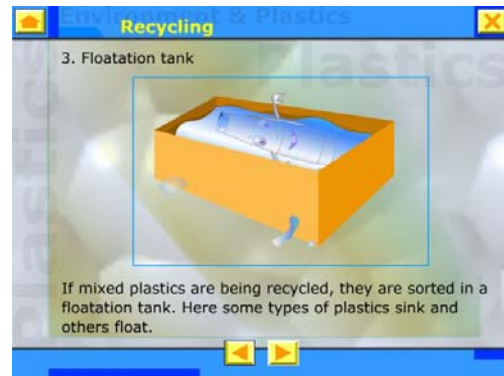


Fig. 8 Animations to explain Recycling process

## II Learning Objects:

Other area where the DET ventures is web-based learning. Apart from developing and offering full-fledged online courses in various areas, DET also has developed Learning Objects (LOs). About 100 LOs are developed for Grade X in Mathematics and Science. Maharashtra State Education Department modified its Grade X curriculum in the year 2007. Since Grade X examination is a Public examination (at the end of the Secondary stage of education), it is very important examination in the life of any X grader. In order to assist the learners in the new curriculum, it was decided to develop Los in subjects like Science (Physics, Chemistry, Biology) as well as Mathematics (Algebra and Geometry) These are uploaded on [www.mkcl.org/ocw](http://www.mkcl.org/ocw)

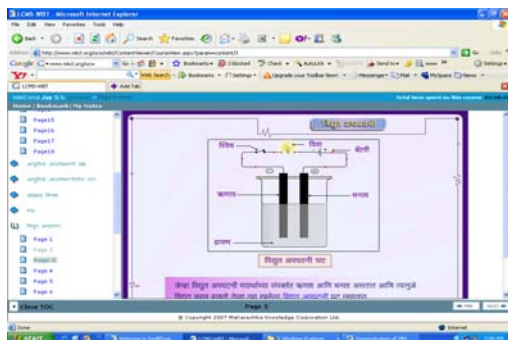


Fig. 9 Learning Object on Electrolysis



Fig. 10 Learning Object on Statistics



Fig. 11 Extraction of Iron

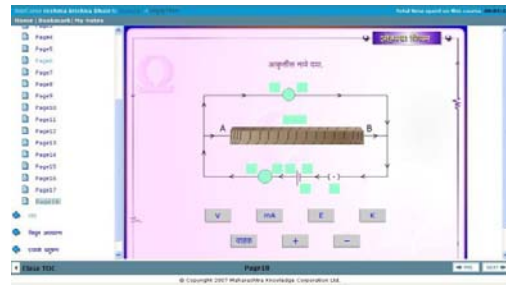


Fig. 12 Ohm's Law

The students are supposed to log in and work on the LOs. Since this is a learning object, it is small in size (about 15 frames) and a single concept as well as a procedure or principle is explained with the help of examples. There is interactivity only at the end of the LO.

We Plan to demonstrate some of these LOs in the PCF5.