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# Improving the Design, Delivery and Marketing of Children's Software

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**Abstract:** Numerous application software packages exist that attempt to teach children various educational skills. However, some of these programs tend to have short-comings. A discussion is made of some of the flaws of children's educational software programs, as well as recommendations for improvement in the design of such programs. No specific packages would be quoted since general comments would be made that all designers can look at for improving their packages. The research is based on the evaluation of over 25 children software packages over a period of 7 years. The results show that many packages still need a lot of improvement before the software can be extremely beneficial to children. The study can be used by developers for improvements in product design quality. The points can be noted by educators using the packages so they can explain the design flaws (where necessary) so students are not misled. Marketing and delivery methods are also briefly discussed.

**Key words:** Desidn, dehivery and marketing, children's software, computer, software package

## INTRODUCTION

The computer is an invaluable tool in training young children. It has indicated that there's no replacement for baby's or toddler's discovery of the real world (http:// www.pctots.com). Today their real world includes the computer. The computer has many wonderful attributes that make it a valuable tool for parents and teachers of young children such as its ability to deliver the highest quality sounds and images while teaching cause and effect relationships. This observation also applies to preschoolers. With this in mind and based on the stress on the importance of children's educational software (http://www.childrenssoftware. com; http://www.superkids.com/aweb/pages/reviews/ multisub/kinderg/02/jsadvk/merge.shtml; http://www. microweb.com/pepsite; http://www.pctots.com/; Hosein, 2007) we seek to suggest a few simple guidelines that can improve the design of educational software packages. Also, many countries use children educational software designed and implemented externally. This study also examines some shortfalls of children's software with respect to school curricula and suggestions for improvement.

This research is based on the evaluation of over 25 children software packages over a period of 5 years. While the author is pleased to report that many packages are very educational with good graphics, animation and sound, some packages were deficient in one way or the other. For those that were generally good, some improvements could still be made to their design. The proposals suggested in this study should not be difficult to implement since many resource persons are usually involved in the writing of a package.

Note that in the text that follows, 'game' really refers to 'children's educational software package'.

## LACK OF 'DOUBLE TEACHING' APPROACH

The concept of 'double teaching' was not fully explored in many of the examined packages. For example, counting is a fairly simple activity for children. Some packages have counting activities where objects and animals are displayed on the screen. However, in many cases, familiar objects and animals etc. were used. What could be done to enhance learning is to display animals that are not so popular or objects that are not readily known so the counting game also teaches the names of new animals and objects. After a successful counting of the number of elements, the software can then say Correct there are X ----------. The dotted lines represent the new element that the child can learn about. Resource persons to implement design recommendations should not be a problem. A lot of packages have over 50 persons involved in the design process. There are specialists in scenario design, graphics, animation, sound and multimedia etc. Geography and other skills can be acquired in a similar manner. For instance, one can ask for places beginning with 'M' and then a map can be shown of where the place is located.

## USE OF MISLEADING PRINCIPLES

Sometimes unrealistic situations arise. In one game, the characters had to avoid objects and cross a bridge. No other bridges were seen. After they finished crossing the bridge, they automatically went back to the other side of the river so the game could be played again. This is confusing since a child may wonder why they had to put some effort into crossing the bridge the first time and then suddenly they are back on the other side without crossing the bridge again! A simple solution would have been to do an animation where the characters quickly went back over the bridge or even better-let the game be run the other way so they can avoid the obstacles on the way back.

Another misleading situation is where the gamers have to steal items. Although, the main idea was to get the items to complete a task, the software should not have implied that the items are being stolen. Children may learn more from a game than what the designers had originally intended. Instead of having to let them go directly to an orchard to pick a farmer's apples, it might be better to start by saying 'Farmer X has decided to give you some apples, collect Y apples to....etc. This at least lets them know that it is ok to pick the apples.

## POOR GRAPHICS AND OPERATING SYSTEM INFLEXIBILITY

Some games did not cater for developments in operating systems and hence did not work when operating systems changed in minor ways. A few packages had poor graphics i.e. only 256 colors were used with poor resolution. Some games, although graphics were good, did not allow a larger screen size to be used.

The main solution to poor game resolution games is not to buy them in the first place. Reviews should be checked before games are bought. Package labels should also be scrutinized. If possible, demos of software should be freely downloaded and tried before the full game is bought. Freddi Fish® for instance has some demos of the real game and if the user likes it, the full game can be purchased.

## ELECTRONIC SOFTWARE DELIVERY

With developments in the Internet, the ubiquity of broadband and the ever increasing use of ecommerce, many vendors are making software available by electronic download. This is generally ok, but be careful of the approach used by the vendor or their associated software delivery companies for electronic delivery. One package was downloaded and a key was purchased to activate the full version. The vendor changed the windows registry so the game was registered. Later on, the operating system had to be redone and the game kept saying 'trial over'. The only way to get the game to work was by purchasing the registered version again which also changed the registry so that the game became the full edition. The problem is that whenever there is a system crash or a reinstallation of the operating system, the game would not work. Buying the same game over and over seems unreasonable. The boxed version may have been a better idea in this case. The main problem was that no one said up front how the registration process worked so the user did not know of implications of the registry editing to run the game and the need to purchase a new key if the system changed. This seems to be an unfair practice.

## AUXILIARY GAME LEVELS

Some games have extra levels that are not very educational but they test lower level skills like speed of response to moving objects. In some cases, it was difficult to exit these small game levels to do the more educational materials. These games should also have a time limit in case the child gets too distracted from the main educational games.

## LACK OF LIVELY AND RESPONSIVE ENVIRONMENT

Many games did not have a lively environment probably because it requires extra animation and coding. A few games had animations for nearly every object on the screen. Animating ambient objects has the effect of making a child entertained whenever some game sections become boring after they are played regularly. The idea is to keep children interested in the package as a whole.

## GAME MASTERED TOO EASILY

In cases where games are mastered too easily or quickly, the return on the investment in the software can be low. If a game involved the solving of small puzzles in a larger puzzle, then after the game is won, maybe the puzzles can be randomly ordered for diversity. In Freddi Fish®, the game intelligently tracks game paths and changes the paths after a game is won. Although some of the paths are similar for subsequent games, the idea is worthwhile since it allows the child to still benefit from a conquered game. This increases the value of the software. In one game, which was won after about 5 rounds, the graphics experts mirrored the image so that the screen was

flipped in such a way that finding a particular object still proved to be challenging. This would obviously have saved on the size of the game files since a previous image was simply manipulated!

## MARKETING

Every vendor should be interested in marketing other product lines that they have. However, some games still continue to leave out additional marketing. After the game is ended, a reward screen is shown and nothing else. Animations of other products should be shown, web sites should be listed etc. so that if a child liked a game, he may be interested in trying others that are shown in the application. Some vendors even put demos of other games on the CD so they can be easily tried out.

## REALISM

Although most games had very good animations and multimedia etc., some had lack of realism. In a beach situation, good graphics are nice but sea and water sounds are also quite important. The author was actually able to relax by hearing the beach sounds including breaking waves at a beach scene in a particular game! This is commendable for the software designers and others should follow that approach.

## SCREEN ENTRY/EXIT

Some problems were seen regarding entry and exit of characters from screens. Making characters appear from nowhere and just disappear would save on coding but results in unrealistic situations occurring. A simple solution where relevant is to provide a door for entry/exit, or to let characters simply walk into or out of a screen.

## GENERAL LACK OF CUSTOMIZED MODULES

Many packages are great at teaching Mathematical concepts as well as grammar and vocabulary. However, they may not be so useful at test time for practice of key concepts learnt. Customized modules should be used that can cover syllabuses. Educational software should be able to be used near test time for practice when parents are busy! Children's software is a major form of elearning and customization can further enhance self-study and learning.

## OTHER MISCELLANEOUS OBSERVATIONS

In a few cases, data entry used keyboard rather than a mouse approach making it tedious to enter data. One game had a sort of mix-up between use of arrow keys and other keyboard keys. Arrow keys could have been easily used but instead navigation was by other keyboard keys. This is not standard for most games.

## CONCLUSION

A study has been conducted by looking several children's software packages and suggestions for their improvement. If these refinements are employed it is the view of the author that a more academically sound product that can be delivered to the student. Parents would be happier with the benefits of their investments in these electronic learning systems and the student can learn more.

The study of these packages is ongoing. The use of localized software and customized software for regions is currently being investigated.

## REFERENCES

Hosein, M., 2007. Educational software design for young children with reference to trinidad. Asian J. Inform. Technol., 6 (8): 870-872.

http://www.childrenssoftware.com, 2007.

http://www.microweb.com/pepsite, 2004.

http://www.pctots.com, 2007.

http://www.superkids.com/aweb/pages/reviews/multisub/kinderg/02/jsadvk/merge.shtml, 2007.