Programmed learning: A blend of technological developments with Educational Psychology

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Abstract

The technological developments should be integrated with the expansion of knowledge made in the field of Educational psychology. As both, that is Technology and Educational Psychology is required for the improvement of human life. The advancements of science and technology and their applications should be blended with the educational psychology as it will yield dividends in almost all the fields where human life is comforted. The following article makes an attempt to put light on the aspect of blending technological developments with the advancements made in educational psychology.

KEYWORDS:- Technological developments, Educational psychology, Distance education, Programmed Learning

Objective of the study

To explore the association between technological developments and Educational Psychology.

To improve and upgrade the human life with the onset of educational psychology and technological developments.

To study the advantages of programmed learning.

Research methodology

The following paper follows the Descriptive Approach of Conclusive research. It relies on the empirical observations done during the study. It analyses the advantages of programmed learning keeping in mind the applications specified by Educational psychology.

The following paper also relates the association between technological developments and Educational Psychology to the teaching – learning process. Observations of the learners, i.e. the students, have lead to the conclusion that the boons of technological developments and Educational Psychology should be used for better outcomes in the teaching – learning process.

Introduction

The advancement of technological developments has gradually entered in the educational field. They have reflected in the teaching methodologies, strategies in the teaching – learning field. Earlier, the advent of the technological developments were restricted only to the defense purposes, especially to protect the nation’s boundaries. But today this amazing field of development has a prestigious place in the educational sector.
As days pass by the advantages of using the technological developments become inseparable to today’s teaching – learning process. Hence the boons given by technological developments are used for the betterment of the educational process.

The boons given by technological developments are used in traditional modes and also in Distance education mode. Both the teaching modes are benefited through the technological developments. Let us see the technological developments that are used in the Distance education field.

Distance education means the education which has a physical distance with the taught and learner. Any forms of learning that involve a physical distance and more importantly absence of face to face interaction between the learner and the taught is known as “distance learning”. Thus corresponding courses by post, television programs, audio cassettes and computers are all used in distance learning. The key benefit of Distance learning is that the learner can pursue education at his own time and place. This benefit can be blended with the technological developments in such a way that more and more people are engrossed to pursue their education through the distance mode.

The Distance education learners are the second chance learners as compared to the traditional learners. The traditional learners are the first chance learners as they are young, have lesser responsibilities as compared to the second chance learners. They attend the regular classes and have to complete the course within a given period of time. The time limit for completion of the course, the place are all fixed in traditional courses making them rigid inconvenient to the students. All these inconveniences are marginalized, giving more importance to student’s conveniences. The technological advancements can be brought into play to make the Distance education course interesting. The onset of technological developments has given rise to programmed learning.

Out of the many learning styles, one such style is “Programmed Learning”. This type of learning includes advantages given by the technological developments and the benefits given by Educational Psychology.

Programmed Learning is an innovative learning style in the teaching learning process. It is useful in giving instructions in the traditional mode as well as in the distance education mode. Programmed Learning is advantageous in both the modes because it gives systematic and individualized instructions.

The types of Programmed Learning are Linear Programming and Branched programming. Both the programming instructions can be made more interesting by creating slides on the computers. Using computers for programming instructions is investigative. It is better to plan the instructions before entering the programming instructions on the slides of the computers.

The credit of linear programming style goes to B. F. Skinner. Linear programming style is related to “operant conditioning”. Operant conditioning states that human behavior is shaped through suitable reinforcement to the responses. It is a gradual process and the responses are conditioned in a step by step manner.

Hence while programming in linear way the information is broken down in pieces of related information and then they are sequenced into meaningful steps. The
information which is to written in the steps is planned out. The information should be so written that it should be linked to the information in the next step. The learner has to respond to each step actively and the reinforcement is given immediately. The reinforcement depends on the correctness of the responses given by the learner. If the response is correct a positive reinforcement is given, motivating the learner to attempt more responses which will be positively reinforced.

A pictorial representation an example of linear programming –

<table>
<thead>
<tr>
<th>Information given in step one</th>
<th>Information given in step two</th>
<th>Information given in step three</th>
<th>Information given in step four</th>
<th>Information given in step five</th>
</tr>
</thead>
</table>

A sample lesson is as follows –

Name of the Unit: Nouns & types of nouns

<table>
<thead>
<tr>
<th>Definition the term NOUN</th>
<th>Examples of the defined term</th>
<th>List of the types of the NOUNS</th>
<th>Explanation of the first item of the list</th>
<th>Examples explained term</th>
</tr>
</thead>
</table>

Linear programming instructions can be used in the higher levels. Lets us view an example of using linear programming instructions in higher educational courses.

Unit: Educational research and types of educational research

<table>
<thead>
<tr>
<th>Definition the term research</th>
<th>Examples of the defined term</th>
<th>List of the types of the research</th>
<th>Explanation of the first item of the list</th>
<th>Examples explained term</th>
</tr>
</thead>
</table>

For explaining this topic, a sequence has to be followed. One of course cannot state the examples before the explanation of the concept of the research. Or it will not bring to any comprehension if one explains the minute details of the various types research before stating the concept of the research.

This type of programming is very beneficial for teaching the mathematical equations. Solving the mathematical problems and reaching on to the correct answer can be achieved by following certain logical and sequential steps. These sequential steps can be pre – planned in the format of the linear programming instructions. After the completions of each instruction reinforcements are given thereby motivating the person to solve the problem on his or her own successfully.

The next type of programming instruction is branched programming instructions and American psychologist Norman Crowder is given much of the credit for formulating this learning instruction. As the word “branching” means the subdivision the stem or trunk. The same concept is applied in the branched programming instruction style. The
main concept (the trunk of the tree) is sub divided into smaller concepts (the stems of the tree) and further again to other minute details of the topic. *The basic difference between the linear programming instructions and branched programming instructions is that the learner can take his own decisions and become accustomed his own learning styles which suit his pace of learning.*

When learning takes place errors are obviously made. These errors do not hinder the learning process but due to the errors one finds a way to the correct answers. Eliminating the errors lead to the accurate answers. In branched programming instructions if an error occurs, it is detected. The detected error is then further rectified for the correct response. This may also be done by going to the earlier subject matter already learnt. When the wrong response is corrected then the person goes to the next concept to be learnt.

The advantages of branched programming instructions are as follows –

1. The center of the teaching – learning process is the learner and not the facilitator or the instructor.
2. The learner learns with his or her own speed and pace.
3. Much of the learning takes place when freedom is give to the learners. In branched programming style freedom is given to the learners so that they can learn at their own pace.
4. Learning is done when the new concepts are revised. The learner gets an opportunity to travel to and fro in the newly learnt content. If the responses given by the learner are not up to the mark, the learner can start learning the content from which he or she has not understood. The correct responses are appreciated there by internally motivating the learner to grasp the content till the end.

Pictorial representation of an example of branched programming
An example of the branched programming

The matter or the concept is placed in a logical sequence in both the programming methods. The difference is the simplicity of the presentations of the matter. In linear programming the subject matter is presented in a straightforward and uncomplicated form. It follows a certain direction. Whereas the branched programming follows a complicated format, which does not follow a definite direction, it is like a scrambled book where the pages do not follow the normal sequence.

As the linear programming the subject matter is presented in a straightforward and uncomplicated format it is used for fixing of learning and generally meant for the lower classes. But this is not in the case with branched programming. The subject matter is in complicated format generally meant for higher class students.

**Conclusion**

The above paper explores the association between technological developments and Educational Psychology.

The lower level objectives of learning like knowledge and understanding can be easily attained through the linear programming style. The higher objectives of learning like synthesis, evaluation can be attained through the branched programming method.

Educational psychology and technological developments can be effectively used together to improve and upgrade the human life. The technological advancements have given many boons to mankind. These advancements can aptly used for improving the results in the teaching – learning process. Hence it only through the technological advancements and the applications of educational psychology a better and comfortable human life can be achieved. The linear and branched programming concepts can be blended with the technology for the creation of excellent learning designs which would help future learners to be more engrossed in the learning activities. The learner’s engrossment is needed for better results in the whole teaching – learning process.

**References:**