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## **The Implementation of Constructivism Learning Theory in Open and Distance Learning Materials: An Innovative Idea**

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### **Abstract**

Distance learning university has unique characteristics. One of them is the number of students which is usually larger than the conventional university. In order to serve its students better, both academically and administratively, the distance learning university usually applies a uniform approach in designing students' learning activities. The approach covers learning process and examination component. The reason of using this approach is mainly based on managerial factors.

The uniform approach which is associated with behavioral learning theory limits the creativity of distance students to construct their knowledge. It is necessary for the distance learning students to have a broad spectrum of knowledge used in daily professional activities. The purpose of the present paper is to elaborate the possibilities of using other approach that will be able to enhance student knowledge. Instead of using uniform or behavioral approach, there are possibilities to apply constructivism learning theory in printed material to be used distance learning system.

## **Background**

Distance learning system has been used to solve educational problems both in developing and developed countries. The use of the system is aimed to widen access for the society to improve its educational level. The system has been used as an alternative way to enroll in available educational system. Distance learning system has significant different with regular educational systems which really depend on face – to – face interaction between student and instructor. The use of technology and communication system is very important in conducting the distance learning system. There are various technology and communication system that can be used in delivering instructional content.. Those can be classified as electronic and non – electronic learning material.

Most of open and distance learning universities in the world – including Universitas Terbuka (UT) - use printed materials to deliver their instructional content to their students. UT uses printed materials as main delivery mode of its instructional content. The selection is based on its low production cost and universally access by the students.

The instructional design applied in UT's printed materials is very tight structure in common. The content of those materials generally is very dense. In addition, the printed learning materials consist of instructional guide to be used by the students to achieve predetermined instructional goal. UT's students tends to use these printed - materials as the only sources to study the skill and knowledge. The design gives no chance for UT's students to widen their knowledge and skill. To solve this problem, it is necessary for UT to find an alternative approach of designing printed learning material that can be used to widen students' knowledge and skill.

### **Profile of UT**

UT, one of the mega universities in the world due to its student body, was founded in September 4th, 1984. Recently UT serves 522.960

active students who study in five available faculties such as:

- Mathematics and Natural Science Faculty
- Social and Political Science Faculty
- Economic Faculty
- Educational Faculty
- Faculty of graduate studies

Around 80 % of UT's student body is teacher who resides outside of Jakarta. UT conducts 32 study programs and one graduate program. So far UT has around 670. 690 graduates or alumni who have worked in various areas in Indonesia.

The biggest challenge that UT is facing now is to improve the quality of teacher in Indonesia. The operational cost of UT is less than IDR six millions per student per year. With this limitation UT has to increase the quality of its learning system. One of the strategies to achieve this aim is to improve the quality of its learning materials.

The role of learning material in open and distance learning system

Learning is considered to be an individual effort done to achieve competencies in certain area. Learning material used in open and distant learning system must be designed to achieve this objective. By using the material the student will be able to conduct an effective and efficient learning process.

The open and distance learning system has several characteristics that differ significantly from conventional learning system. Michael G. Moore and Greg Kearsley (1996) state those characteristics such as:

1. Separation of teacher and student
2. Influence of an educational organization
3. Use of technical media
4. Provision of two-way communication
5. Possibility of occasional seminars
6. Participation in the most industrial form of education (p.206)

The separation of teacher and student is one of the characteristics that force open and distant learning system to use technology and learning material in its operation. The use of learning material is very important in conducting open and distance learning system.

UT uses various type of learning material which includes printed and non - printed materials. Printed learning material is used as a main delivery system of course content. Non - printed learning materials such as audio, video and computer based programs are used to deliver the content which is difficult to be learned in printed material. In other words, the use of non - printed learning material is designed as an enrichment of course content delivered through printed learning material.

Smaldino, et.al, (1996) noted the specific role of learning material used in distance and open learning system which includes:

- Information presentation
- Student – teacher interaction
- Student – student interaction
- Access to learning resources.

In general, most open and distance learning institutions in the world use printed learning material as a main device to deliver its instructional content. There are several consideration of using printed material as a major delivery system of instructional content of distance and learning institutions such as: familiarity to its user; low production cost; random access; and high adaptability. (Keegan, 1990)

The printed learning material used in open and distance learning institutions should be well designed to achieve a specific need of its students. Moore and Kearsley (1996) state the principles of an effective and efficient open and distance learning material which includes:

- Good structure
- Clear objectives
- Small units
- Complete

- Repetition
- Synthesis
- Stimulation
- Variety
- Open-ended
- Feedback
- Continuous evaluation (p.122-123)

UT uses learning material with a very specific approach. The printed material, which is also called module, represents a course of study. The course of study is divided into several sections. A course with two credit semester value consists of six learning sections while a three credit semester course consists of nine sections. Each section covers several units. The purpose of this very tight structure of design is to create systematic learning process of the students. In addition, each section of printed learning material covers a complete course content. UT is also implement “self-learning” approach in its printed learning material. The purpose of using this approach is to aid students’ learning process.

The students of UT are highly dependent on printed learning material. Since its covers a complete course content, the students tend to use the printed material as the only learning resources to achieve predetermined competencies.

The very tight structure and complete coverage of course content will create a negative impact to students learning habits. They lack of efforts to widen their horizons - knowledge and skill. Students are very dependent of using available of printed learning material. They usually have no skill to develop and to construct their knowledge.

Learning result will be better if student uses various kind of learning material while conducting learning process. Interacting and comparing various learning material will contribute students’ effort to construct their knowledge and skill. It is necessary for UT to find an alternative approach to design an effective and efficient learning material that can be used to widen students’ skill and knowledge.

## Constructivism learning theory

In general there are three types of learning theories which are widely known. Those are: behaviorist; cognitive; and humanistic. Each of these theories has different perspective on how learning happens to human being. The behaviorist learning theory focuses its attention to how external factors influences learning process. The cognitive learning theory describes the mental function of human learning. Humanistic learning theory explains the role of motivation in individual development.

Constructivism is considered part of cognitive learning theory which is closely related to other learning concepts such as discovery and meaningful learning. The use of constructivism approach in learning activities is aimed to maximize students comprehension. (Cruickshank, 2006, p. 255). Anita Woolfolk defines constructivism as: "...view that emphasizes the active role of the learner in building understanding and making sense of information. (p. 323).

Cruickshank (2006) states several learning activities that are considered of implementing constructivism approach such as:

- Collaboratively formulating questions
- Explaining phenomenon
- Addressing complex issues
- Resolving problems (p. 255)

One of the important factors that should be considered to implement constructivism approach is student support and assistance in form of the following methods:

- Prompts or clues
- Explanations
- Demonstration
- Coaching
- Adding learning resources ( Cruickshank, 2006, p.80)

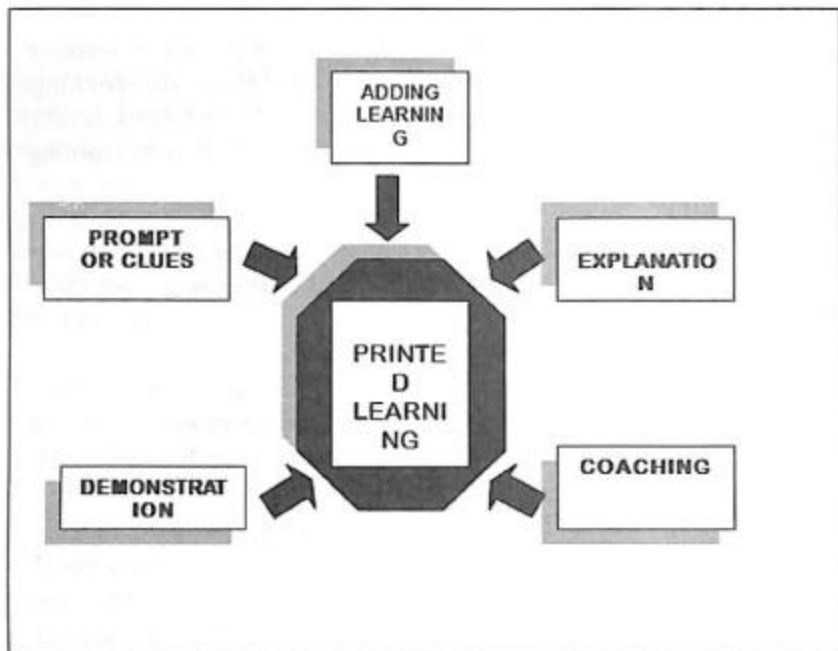
The objective of implementing constructivism approach in learning activities is to provide students with specific abilities in searching, understanding, and applying knowledge and skill. Cruickshank (2006) notes several characteristics of constructivism approach to learning such as:

- Active learning
- Learner should engage in authentic and situated activities
- Learning activities should be interesting and challenging
- Bridging
- Learner should think about what is being learned
- Learning takes place best in communities of learners
- Teacher facilitate the acquisition process of information
- Teachers must provide learners with assistance or scaffolding.

According to constructivists, learning is an active process. The students have to search a meaningful knowledge and information to be applied in certain situation. The students are not passive learning object. They must be able to construct knowledge by connecting instructional content to previous concepts. Learning is an active process of finding, understanding, and implementing knowledge to solve a specific problem. Open and distanced learning students, in this matter, must be able to construct their knowledge. They must be competent in gaining new comprehension of learning experiences.

#### Implementing constructivism learning theory in open and distance learning system

The aim of implementing constructivism approach in open and distance learning printed material is to provide students with skill that can be used to search, explore, and connect knowledge and information suitable to individual needs. Implementing constructivism approach in open and distance learning printed material can be done by integrating principles and important characteristics of constructivism approach into UT's printed learning materials. Several important concepts such as: prompts or clues; explanations; demonstration; coaching; adding learning resources should be integrated in producing open and distance



**Diagram1. Integrating constructivism into distance learning material**

The explanation of courses content in printed learning material of UT should integrate the important role of teacher which includes: guiding; motivating; intriguing; expounding; explaining; provoking; reminding; asking questions; discussing alternative answers; appraising each learner's progress, giving appropriate remedial or enrichment help etc.

The team of instructional development who responsible to develop distance learning material of UT has to insure that students must be able to construct their knowledge by finding the meaning of concepts to be learned. This can be achieved by connecting new concept with the previous one. In addition, the students must have a chance to explore the knowledge to be studied by adding adequate learning resources.



## Summary

UT is one of the state universities in Indonesia which conducts its learning process through distance learning system. Printed learning material is the ultimate delivery system used to communicate course content to students. The design of UT learning material is highly structured and self contained. The students of UT are very dependent of printed learning material. They frequently viewed that printed material is the only resources to be studied in order to achieve predetermined competency. This will limit the students' horizon. They will have no skill to develop their competencies. In addition they also have no chance to construct their knowledge.

Constructivism offers an alternative way to provide a big chance for UT students to widen their knowledge and skill. This can be achieved by integrating principles and important characteristics of constructivism learning theory in designing and producing UT printed learning materials.

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