

**APPLYING CONSTRUCTIVISM APPROACH IN DEVELOPING DISTANT  
LEARNING MATERIALS**



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## Constructivism in Modular System

### Introduction

Universitas Terbuka (UT) is one of the higher education institutions in Indonesia which implements different approach to deliver course content to its students. UT uses open and distant learning system to conduct learning and instructional activities. Several types of media and technology are used in order to be accessed by all the students. Both printed and non-printed media are used to convey the course substances to be learned by the students. Printed media are used as the main channel to communicate the course content.

The decision to select the printed media, as an open and distant or ODL institution main delivery channel, is based on the flexibility of the media to support students' learning activities. The use of media will provide some advantages for the ODL students such as:

- Relatively simple to prepare;
- Readily accepted by students;
- Requires students' literacy;
- It can support the use of other media. (<http://oasis.col.org/>).

The use of printed media also provides other benefits to support students learning activities. The printed media have some characteristics that include: (1) Small and portable; (2) Random access; (3) Mass production; (4) relatively not expensive to produce.

The other types of media are also used to enhance the students knowledge and skills during their study in UT. The use of audio, video, multimedia, and online learning system is necessary for the students in order to master course substances. UT uses non-printed materials to widen students' knowledge and skills. The content of the non-printed media are selected in order to make the students understand comprehensively. The students have to use the media in order to study the available course content.

This present article will elaborate the use of the constructivism approach in printed learning media of the open and distant learning higher education – Universitas Terbuka. Is it possible to implement the

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constructivism approach in printed learning media of the UT as the higher education institution which is implements ODL system?

## **Universitas Terbuka**

Universitas Terbuka (UT) is established on 4 September 1984 as the 45<sup>th</sup> Indonesia state university. UT is entirely implementing distance education mode of learning. The university has been planned to provide a flexible learning and to open wide access for the society to enrol in the higher education. It focuses on serving people who lack of the opportunity to attend face-to-face mode of higher education system due to the various constraints, including lack of funding, living in isolated and rural areas, and work as well as other commitments.

As an open system The UT has continued to grow and improve in terms of its teaching and learning systems, management, and support services for students. The current position of UT reflects not only its past development and achievements, but also the future direction in the context of learners' needs within society.

Due to internal as well as external factors, UT as a higher education institution has gone through various periods of change and growth. Internally in terms of education, UT continuously undergoes change, innovation, and improvement. In response to external pressures for change and to the challenges of changing demands by clients and stakeholders UT has to conduct continuous improvement.

The UT system has also continued to evolve and improve in terms of its teaching and learning systems, management, and support services for students. Accordingly, UT's current position reflects not only its past development and achievements, but also the future direction in the context of learners' needs within Indonesian society.

This present paper will elaborate the use of constructivism approach in printed learning materials used to deliver course content of Universitas Terbuka. Is this learning approach able to expand students' knowledge

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horizon during studying in Universitas Terbuka. How to implement the learning approach in open and distant learning materials.

### **Modular system**

As an open and distant learning higher education institution, UT mostly used media and technology to deliver its course content to massive amount of students. UT uses printed media which implement modular learning system. Robinson and Critenden, in their classic journal article, defined the learning module as: "...it is a packet of teaching materials consisting of behavioral objectives, a sequence of learning activities, and provisions for evaluation." (p.2).

The modular system of printed materials of UT consists of some components such as: (1) course overview; (2) learning activities; (3) description of course content; (4) summary; (5) exercise; (6) formative evaluation; (7) feedback; (8) glossary; (9) references.

Course overview describe the essence of the course, instructional goals and objectives that the students must attain after studying the course, and learning methods that should be done by the student while studying the module. The students have to conduct self-directed learning in order to finish their study program in UT. They have to study all the offered courses systematically in order to master the predetermined competencies.

The modular system is designed with *self -instruction* and *self-contained approach*. Self instruction means that modules as learning materials consist of some instructions that must be followed by the students in order to achieve the course objectives. Self-contained approach means that the modular learning materials consists of the whole substances or content of the courses.

Since the modular system of the UT's printed materials used the self-contained approach, the students have limited chance to study other learning resources to enhance their knowledge horizon. It is necessary for the students to widened their knowledge horizon while studying in higher

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education- university. UT has to find the appropriate learning approach that enable the students to enhance their knowledge and skills.

### **Constructivism learning approach**

Constructivism is one of the available learning theory which is based on the continuous observation and scientific study -- about how people learn. The theory noted that people construct their own understanding and knowledge of the world, through experiencing things and reflecting on those experiences.

This learning theory is considered as a philosophy that enhances students' logical and conceptual growth. The ability of teacher in creating the meaningful learning is very important in implementing the constructivism learning theory. It is necessary for the teacher to create dialog that enable the students to interact with learning materials. In this sense, learning interaction between teacher and students and among the students are ultimate activities.

The constructivist philosophy believes that learner basically is an information constructor. Indeed People construct or create their own subjective representations of objective reality actively. New information is linked to prior knowledge, thus mental representations are subjective.

(<https://www.learning-theories.com/constructivism.html>).

For example, when we face something new, we have to reconcile it with our previous knowledge and experience. We perhaps changing what we believe, or maybe discarding the new information as irrelevant.

Basically, people are active creators of their own knowledge. In order to be able to implement the constructivism learning theory, we must ask questions, explore, and assess what we know.

Constructivist teacher or instructors encourage students to constantly assess how the activity is helping them gain understanding. Constructivist approach in learning basically has several important characteristics such as: (1) introduce student with new concepts; (2) students will involve in active dialoge; (3) encourage group learning interaction among the students; (4) learning process happens through experiences; (5) learning

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will be more comprehensive and meaningful; (6) implementing the essence of student- centered learning.

(<http://www.teachnology.com/currenttrends/constructivism/>)

To implement the constructivism learning theory the students have to do the following learning activities such as: (1) Engage; (2) Explore; (3) Explain; (4) Elaborate; (5) Evaluate.

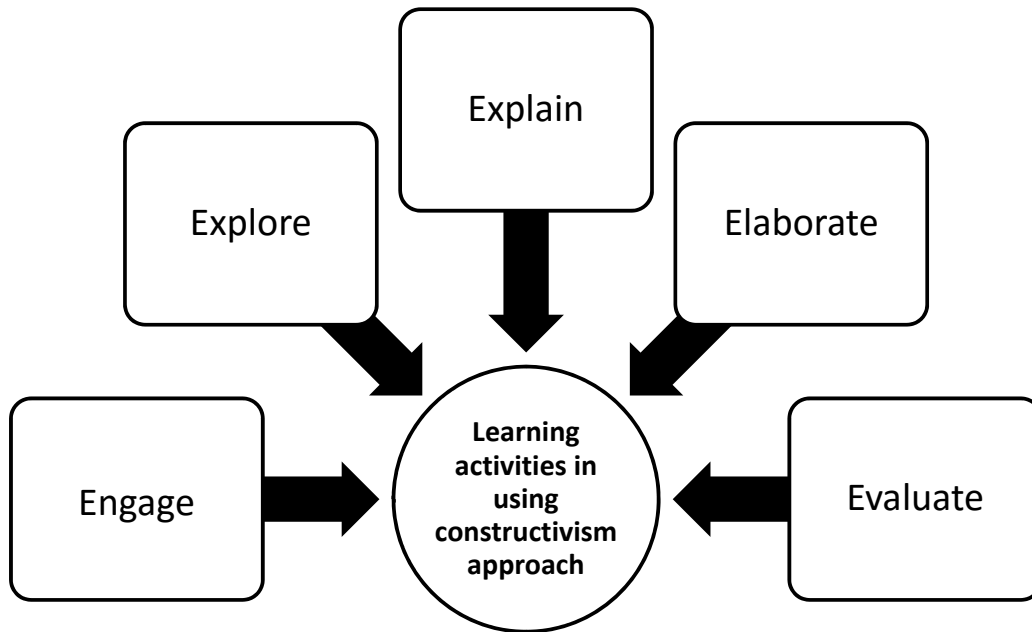


Figure 1. Recommended learning activities in using constructivism approach

The use of constructivist approach has to enable the students to involve in their learning activities intensively. Intensive learning interaction with some selected learning resources provides opportunity for the students to explore learning content in order to attain the intended instructional goal and objectives. The use of constructivism learning approach requires the students to explain the learned course materials comprehensively. Besides, the students also have to reflect what they have learned. In addition, evaluation is also important activities for the students in order know the attainment of their instructional goal and objectives.

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The central idea of constructivism is that human learning is *constructed*, that learners build new knowledge upon the foundation of previous learning. The constructivism learning approach is sharply contrasts with one in which learning is viewed as the passive transmission of information from one individual to another. The key of constructivism approach is people develop and build new knowledge and skills based on previous knowledge.

(<http://www.sedl.org/pubs/sedletter/v09n03/practice.html>).

Constructivism has significant implications for teaching and learning activities such as: (1) Teaching cannot be viewed as the transmission of knowledge from enlightened to unenlightened; (2) Learning is based on prior knowledge, teachers have to provide learning environments that provide opportunities for the students to connect it with new knowledge; (3) The students must apply their current understandings in new situations in order to construct new knowledge; (4) time is needed for the students to build their own knowledge; (5) provide opportunities for students dialogue and practices (Hoover (2015)).

In the constructivist approach, the students are urged to be actively involved in their own process of learning. In this matter the functions of the teacher is more as a facilitator who coaches, mediates, prompts, and helps students develop and assess their understanding, and thereby their learning. One of the teacher's biggest jobs becomes asking good questions.

([https://www.thirteen.org/edonline/concept2class/constructivism/index\\_sub1.html](https://www.thirteen.org/edonline/concept2class/constructivism/index_sub1.html)).

Molina and Gable (2012) noted that constructivist classroom should be characterized by the following factors:

- The learning involvement of learners is more active;
- The provision of democratic learning atmosphere;
- The learning activities is more interactive and student-centered.

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- The teacher encourage students to be more responsible and autonomous.

In order to be able to create constructive learning environment in open and distant learning the students have to interact actively with the course content describe in materials. Beside the instructor assist the students learn in democratic learning atmosphere. The interactive and student-centered learning activities have to be implemented in order to encourage students to build their own knowledge. The course content must written systematically so that the student can learn gradually, the principles of "scaffolding" learning principles must be applied in this sense.

## **Printed learning materials and distant learning**

UT uses printed learning materials as a main medium to deliver it courses content. The selection of using this medium is based on the consideration that Print has several advantages for students. It is extremely portable, cost effective, readily available, and comfortable to use. Students don't need special equipment to use it, and with adequate light, print materials can be used anywhere at anytime. Students can review the materials at their own speed.

([https://depts.washington.edu/eproject/lesson1\\_3.htm](https://depts.washington.edu/eproject/lesson1_3.htm)).

Quality learning materials, including both printed and electronic textbooks (e-textbooks), which support a learner-focused curriculum contain the core elements of the subject curriculum, as well as learning strategies useful for the study of the subject. Being important sources of reading for students, quality printed learning materials facilitate to develop students' ability to learn through reading.

The factors that make the good quality of printed learning materials must have greater attention. There aare some criteria that can be applied to assess the quality of printed learning materials which include:

- Create the interactivity between the students and learning substances;



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- The ability to arouse the interest of the students;
- The capacity to actively engage and involve students in the learning process.

In other words, good textbooks tell, involve and interact with students. Through interact with the available printed learning materials the students will be able to build the new knowledge and skills.

Yager (1991) noted that the instructional strategy of constructivist teaching is inviting ideas, exploring, proposing explanations and solution, and taking action (Yager, 1991)

### **Summary**

Universitas Terbuka, one of the stste universities in Indonesia, uses open and distant learning system to held learning activities. Printed learning material is used as the ultimate course delivery system to its students. UT printed learning materialsl is based on modular system with highly structured and self contained substances. The students of UT are very dependent on printed learning materials.

Students of UT mostly use printed material as the only learning resources to be studied in order to achieve the competencies. This will limit the students' knowledge and skills perspective. In order to solve this problem UT has to find proper learning that can facilitate the students to expand their knowledge and skills.

One of the potential approach that can be applied is constructivism learning theory. Constructivism learning theory is a philosophy which enhances students' logical and conceptual growth. There are several principles that can be applied in designing and developing constructivism based printed learning meterials that include: (1) Teaching cannot be viewed as the transmission of knowledge from enlightened to unenlightened; (2) Learning is based on prior knowledge, teachers have to provide learning environments that provide opportunities for the students to connect it with new knowledge; (3) The students must apply their current understandings in new situations inorder to construct new

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knowledge; (4) time is needed for the students to build their own knowledge; (5) provide opportunities for students dialogue and practices. Implementing these constructivism learning principles in ODL printed learning materials will widen students' knowledge perspective and skills.

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