M.E.S.-112
Design and Development of Self Learning Print Material

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By: Anand Prakash Srivastava

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DESIGN AND DEVELOPMENT OF SELF LEARNING PRINT MATERIAL

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BLOCK 1: FACTORS IN THE DESIGN OF PRINT MATERIAL

BLOCK 2: PRINCIPLES OF TEXT DESIGN

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QUESTION PAPER

June – 2023

(Solved)

DESIGN AND DEVELOPMENT OF SELF-LEARNING PRINT MATERIAL

M.E.S.-112

Time: 3 Hours]   **[Weightage: 70%**

Note: *All questions are compulsory. All questions are of equal weightage.*

Q. 1. Answer the following question:

Describe the taxonomy of learning outcomes.

Ans. Ref.: See Chapter-1, Page No. 8-9, 'The Taxonomy of Learning Outcomes'.

Or

Discuss different theories of communication with emphasis on their educational implications.

Ans. Ref.: See Chapter-2, Page No. 22-23, 'Communication Theories' and Chapter-3, Page No. 33, 'Implications for Distance Education'.

Q. 2. Answer the following question:

Describe key features of a unit of self-learning print materials.

Ans. Ref.: See Chapter-12, Page No. 143, 'Introduction'.

Or

Discuss different criteria related to ordering of text in self-learning print material.

Ans. Ref.: See Chapter-6, Page No. 71, 'Criteria for Ordering Material'.

Q. 3. Answer any *four* of the following questions:

(a) Explain the importance of language editing in preparation of distance teaching materials.

Ans. Ref.: See Chapter-9, Page No. 110, 'Language Learning'.

(b) Explain the corrective operations involved in updating a course.

Ans. Ref.: See Chapter-10, Page No. 122, 'Two Corrective Operations'.

(c) Discuss the educational implications of cognitivism.

Ans. Ref.: See Chapter-1, Page No. 10, 'Cognitivist'.

(d) Explain the process of communication.

Ans. Ref.: See Chapter-2, Page No. 20-21, 'Processes of Communication'.

(e) Describe the characteristics of adult learners.

Ans. Ref.: See Chapter-4, Page No. 48, 'The Characteristics of Adult Learners'.

(f) What is the significance of graphics in self-learning print materials?

Ans. Ref.: See Chapter-7, Page No. 83, 'Legible Graphics'.

Q. 4. Answer the following question:

Identify the quality concerns related to self-learning print materials. What mechanisms would you follow to address these concerns as a part of quality assurance? Explain with examples.

Ans. Ref.: See Chapter-11, Page No. 132, 'Quality Assurance: An Ongoing Concern' and Page No. 135, 'Mechanisms for Quality Assurance'.

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QUESTION PAPER

December – 2022

(Solved)

DESIGN AND DEVELOPMENT OF SELF-LEARNING PRINT MATERIAL

M.E.S.-112

Time: 3 Hours]   **[Weightage: 70%**

Note: *All questions are compulsory. All questions are of equal weightage.*

Q. 1. Answer the following question:

Describe each stage of systems approach to course development in distance education—from planning to revision.

Ans. Ref.: See Chapter-4, Page No. 50-51, 'The Systems Approach to Course Planning'.

Or

Explain how the various theories of learning contribute to the preparation of self-learning materials. Substantiate your answer with examples.

Ans. Ref.: See Chapter-3, Page No. 32, 'Introduction' and 'Learning Theories and Distance Education'.

Q. 2. Answer the following question:

Explain why simple language and suitable format are necessary for self-learning materials. Describe the roles of course writer and course editor to ensure these requirements.

Ans. Ref.: See Chapter-9, Page No. 110, 'Simple Language Effective Communication and Readability', 'Format Editing' and Page No. 108, 'Different Roles of Editors in Different Distence Teaching Organisations'.

Or

Explain the importance of effective communication for distance learners. How can it be achieved in self-learning materials to facilitate learning?

Ans. Ref.: See Chapter-9, Page No. 110, 'Language Editing'.

Q. 3. Answer any *four* of the following questions:

(a) Explain the difference between study materials of correspondence education and distance education.

Ans. Ref.: See Chapter-5, Page No. 67, 'Distance Education', 'Correspondence Education', 'Difference between Distance Education and Correspondence Education'.

(b) Discuss the relevance of 'course revision' for quality maintenance of self-learning material.

Ans. Ref.: See Chapter-10, Page No. 125, 'Revising a Course'.

(c) Why is it crucial to know about learners' need and characteristics before course development in distance education?

Ans. Ref.: See Chapter-8, Page No. 93, 'Course Preparation: The Process'.

(d) Elaborate how inclusion of different technologies complement print medium.

Ans. Ref.: See Chapter-12, Page No. 144, 'Developments in the Technology of Prepration of Print Materials'.

(e) Why are reinforcement and motivation important in self-learning material?

Ans. Ref.: See Chapter-1, Page No. 5, 'Reinforcement' and Chapter-7, Page No. 82, 'Presentation and Motivation'.

(f) Explain the importance of 'quality assurance' in distance learning material.

Ans. Ref.: See Chapter-11, Page No. 132, 'Quality Assurance: An Ongoing Concern'.

Q. 4. Answer the following question:

You are a course coordinator in an open university:

(i) Specify your academic and administrative roles in the various stages of course development.

Ans. Ref.: See Chapter-12, Page No. 144, 'Developments in the Technology of Preparation of Print Materials'.

(ii) Explain about the importance of team work and interpersonal relations during course development process.

Ans. Ref.: See Chapter-8, Page No. 97, 'Management of Text Preparation'.

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DESIGN AND DEVELOPMENT OF SELF LEARNING PRINT MATERIALS

BLOCK 1: FACTORS IN THE DESIGN OF PRINT MATERIAL

Theories of Learning

1

INTRODUCTION

Most open and remote learning programmes use print Material. Self-learning print resources are unique to teaching. Textbooks, lecture notes, journal articles, and training manuals are designed, developed, and produced differently. However, a distance teaching text is different from a text book because it has to guide, motivate, explain, discuss, ask questions, assess the learner's progress, provide remedial measures, and offer advice. Distance teaching print Material must examine print's qualities and how print is a convenient medium for remote students who may not have access to modern technology. Printing texts is cheap and easy. Self-contained, portable, and easy-to-access print material is the most convenient medium. This unit will cover remote teaching text development theories and principles.

Theoretical learning underpins curriculum, syllabi, text design, teaching methods, and evaluation. Past experience or current and future requirements inform these theories. Before implementing our educational strategy, improving teaching, or changing the educational system, we should study about numerous learning theories. Most distance teaching text resources were designed using cognitive, behavioural, and information processing learning theories until recently. However, literature on constructive material design is expanding.

CHAPTER AT A GLANCE

THE CONCEPT OF LEARNING

'Learning' in the conventional meaning is the process of assimilation of knowledge arising from the interaction between the teacher and the taught. With the democratization of education and the rising need for learning and continuing education, the traditional teacher-student connection is unworkable. Distance education limits personal touch and its function in learning. Distance education requires rethinking learning. In distance education, learning takes occur not through the mediation of a teacher, but primarily via the mediation of text Material and electronic gadgets. Pedagogically, learning and teaching are an integrated mix of classroom-developed learning styles. Examples:

- Learning via reading printed information (textbooks, manuals, lexicons, scientific literature, lecture notes).
- Learning by means of supervised self-teaching (counseling at the outset of studies, counseling by tutors, consulting reading lists).
- Learning by means of independent scientific activity (preparation for written test, the composition of tasks).
- Learning via means of personal communications (usage of the consultation hours of university teaching staff, and of course counseling, peer, interaction, practical case-work, project work, seminars etc.).
- Learning with the help of multi-media.
- Learning by participating in traditional academic education (lectures, seminars, counseling sessions, laboratory work).

Learning and Performance

Reinforced practice leads to learning, a generally long-lasting change in behaviour.

Such a paradigm of learning makes the assumption that some environmental factors lead to basic

behavioural changes in humans that last for a very long time.

Even if someone knows something, they could not have learnt it. Even if you "know" how a computer operates, you might not be able to use it. Therefore, it's crucial to understand the difference between performance (i.e., using this capability in some kind of activity) and learning or the acquisition of knowledge (i.e., capability). In order to maintain the separation between learning and performance, we refer to behavioural inclination. When we discuss a reasonably long-lasting change in behaviour in this context, we are referring to a shift in performance.

Learning and Cognitive Development

According to cognitivists, learning is the modification or reorganization of cognitive structures, which entails knowledge acquisition and knowledge transformation. This perspective allows us to define learning as a change in knowledge, abilities, attitudes, and values brought about by experience, which may or may not be manifested in overt behaviour.

Learning and Maturation

Not all behavioural changes may be attributed to learning. Some alterations in behaviour are brought on by biological growth or maturation. The development tendencies during maturation are completely dependent on biological growth and independent of any particular learning settings. For instance, tadpole swimming and avian flight simply happen at the time of anatomical maturity. When a child's legs are capable of bearing their weight, it can begin to walk.

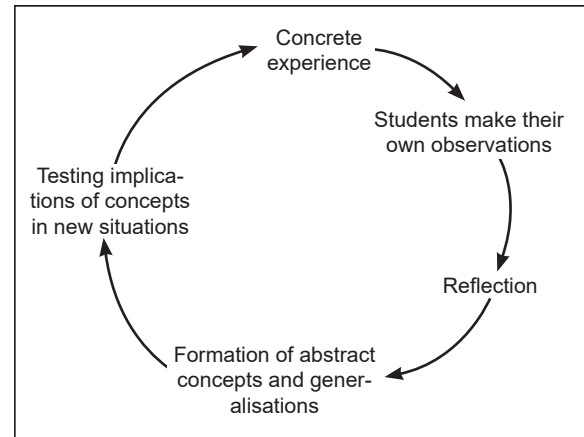**Experiential Learning and Constructivism**

Recent trends have favoured experiential learning. Kolb (1984) believes older persons' life experiences can benefit education. Peter (l997j) claims that experiential learning is constructivism in an adolescent context.

Kolb (1998) defines experiential learning as the transition of experience into knowledge, while Knowles (1984) and Brookfield (1986) associate it with self-directed learning. A constructivist study shows that learning is strongly self-directed. Knowles (1984) makes assumptions about andragogy and experiential learning. Constructivism shares most of these assumptions. Kolb (1984) identified constructivist-relevant experiential learning criteria.

Characteristics:

1. Experience-based learning continues.
2. Learning encompasses world adaption.
3. Learning involves-environment interactions.
4. Learning creates knowledge.
5. Learning involves reconciling opposing worldviews.

Pedagogy informs students, but ignores experiential learning. Andragogy integrates experiential learning into the learning cycle.

Kolb's Experiential Learning Model

This cycle encourages pupils to reflect on their experiences and draw conclusions that change their cognitive structures. They then begin the next experiential learning cycle.

Learning and constructivism: The learner actively constructs information and methods in constructivism. The learner creates a new reality from her own experiences and uses it to handle new experiences in that subject.

Constructivist learning involves real-world concept development. Questioning, critical analysis, application, and reflection-on-action help students develop concepts.

Constructive learning involves actively processing new knowledge, using structured experiential activities, analyzing life events, solving issues, critically examining one's mental framework, exploring belief systems, and assessing learning.

Learning is shaped by the learner's mental framework and needs.

To prepare Material constructively is to provide opportunities for complex processing of information related to a learner's needs and knowledge of the world, design relevant and real-world (authentic) tasks, provide complex stimuli, challenge the learner's existing knowledge structures and values, acknowledge vague structures in knowledge, help learners revisit material in greater depths, confirm the learning identified by learners, and help learners arrive.

In a constructivist learning environment, the tutor/counselor provides programming tasks and creates a micro-world.

Behaviourism's drill and practice strategy makes the teacher redundant, while constructivism's discovery-based learning makes the teacher a facilitator and supervisor.

Behaviourist vs. Constructivist

Theory	Behaviourist	Constructivist
Activities	Drill and Practice Tutorials	Independent learning, experiential learning, programming
Learning Processes	Individual instructional and feedback, drill and practice	Generalisable skills based on individual discovery

Implications for the design process of course Material: Distance education should give adult learners hands-on learning opportunities and help them understand the repercussions of their actions. Designing self-learning Material follows the five constructivist learning conditions. Five requirements:

1. Accept design complexity.
2. Design for social negotiations.
3. Review instructional design information from diverse perspectives.
4. Design flexibility.
5. Promote learner-centered design.

Basic Conditions of Learning: Iqarning external conditions are crucial to learning. Below is a summary of learning conditions:

1. Contiguity: Learning requires almost contemporaneous stimuli and responses. We always want pupils to create connections between a stimulus and their answers.

2. Practice: Practice is responding to a stimulus. To remember S-R (Stimulus-Response) linkages, we need to exercise them. New stimuli and responses demand practice. Practice is essential for all S-R learning (classical conditioning, operant conditioning, skills learning).

3. Reinforcement: It is essential for learning. We'll discuss "reinforcement" because of its complexity and importance. Reinforcement can have diverse learning consequences in students.

Feedback tells you if your answers are right or wrong and reinforces them. Feedback is information that helps students evaluate their performance. Feedback comes in many forms. Immediate, delayed, or end-of-session feedback. Programming and computer-assisted instruction are examples of feedback-driven technology. Feedback on student work improves learning efficiency. Before moving on to new learning Material, the teacher, whether in person or online, must plan feedback.

4. Generalization and discrimination: Generalization and discrimination may be occurrences rather than learning conditions. We name them learning circumstances because they are so intimately related with the basic requirements of contiguity, practice and reinforcement which are required to all learning. Stimulus, generalization, and discrimination describe complicated learning.

Generalization (or stimulus generalization) is this behaviour. A youngster learns to call comparable colors "red" when taught to call one red.

Effective discrimination results in distinct responses to two or more stimuli. A kid, for example, can learn to select the colors red and not pink. It learns to discriminate by ignoring pink.

Approaches to Learning (Deep and Surface)

This subsection discusses different learning methods and whether they affect student performance. A course developer should be aware of the ways to learning her/him building and producing self-learning Material. It helps her/him to recognize whether resources require memorization or knowledge or designed to improve abilities and then to deal with the contents appropriately. These techniques of learning are classified as deep and surface.

A student who uses a deep approach

1. Is interested in the academic task and derives enjoyment from carryirig it out.
2. Searches for the meaning inherent in the task (for example, if a prose passage is read, the intention of the author is sought).
3. Personalizes the task, making it meaningful to his/her experience and to the real world.
4. Integrates aspects or parts of the task into a whole (for example, relates evidence to a conclusion), sees relationships between this whole and previous knowledge.
5. Tries to understand the theories of the task; forms hypotheses. Thus, learners will use a deep technique to learn.

And a learner who chooses a superficial approach

1. Observes the task as a demand to be met, or as a necessary imposition if some other goal is to be reached (a qualification for instance).
2. Sees the different aspects or parts of the task as unrelated to other tasks.

3. Considers the time required to complete the task without searching for the meaning inherent in the task.

4. Relies on memorization, tries to reproduce the surface aspects of the task.

In other words, if a student wants to demonstrate symptoms of having learned something, she/he will adopt a surface level approach.

The specific forms of techniques in the specific learning tasks and, content domain are investigated by distance education practitioners. Many researches have described learning methods and consequences. Matron and Booth (1996) noted that the students developed methods to the activities they undertook according on their experience of those specific instances. Rumsden and Enhvistle (1983) created cluestionnals and interview questions to explore how students approach learning. The box below shows measurement samples:

Deep Approach:

1. "I really attempt to grasp things that appear hard."

2. "I often find myself questioning stuff I read in books".

3. "I usually try to comprehend what I read".

Surface Approach

1. "I feel I have to concentrate on memorizing a good deal of what I have to learn".

2. "I learn technical terminology best by remembering textbook meanings".

3. "I often read things without understanding them."

A systematic association was identified between the traits and approaches employed, for example, the perception of large workloads, poor presentation, lack of choice of content and manner, and assessments that compelled reproduction. On the other hand, the notion of effective teaching and good presentation and freedom to pick what and how to study, are all related to profound ways to leaning.

Biggr (1994) created the learning process questionnaire and study process questionnaire using deep and surface learning characteristics.

Deep learners want to absorb and connect with knowledge, while surface learners want to meet task requirements, which they see as external impositions, according to Kember (I906).

In this section we have studied in fully the concept of learning. From the analysis of the pedagogical structure of distance education, and principles of andragogy, we can infer that learning is a 'central basic function of human life' and the distance learners are very pragmatic about their studies and stend to use the more flexible 'strategic' approach to learning. Learning in adulthood becomes constructivist in approach when great flexibility of the learning and teaching tactics are aimed at bringing about swift changes in content and media.

THEORIES OF LEARNING: BEHAVIOURISM

Views on learning are based on distinct philosophical and psychological beliefs about human nature and how it learns. Educators work on the basis of several theories of learning.

Behaviourist Views

Behaviourism dominates modern learning theories. The behaviourist view is broad and encompasses many ideas, but all of them argue that learning involves making connections between stimuli and organisms' reactions.

Edward L. Thorndike, an early behaviourist, proposed three learning laws: effect, readiness, and exercise. The law of effect highlights the importance of the effect of a stimulus-response (S-R). Poor outcomes degrade the response whereas good results strengthen it. Reward and punishment are, therefore, important aspects of learning. The law of readiness denotes the willingness learner's to make (S-R) connection while the law of exercise is related to the strengthening of the connection through practice. The mechanistic outlook on learning has been established by a later generation of behaviourists. They believe that learning is like conditioning, linking desired responses to stimuli. B.F. Skinner popularized operant conditioning.

Educational Implications

Modern schooling is shaped by behaviourism. Behaviourists view teaching as manipulating the environment to affect students' behaviour and improve education. They recommend the following three concepts to improve teaching-learning transactions.

1. Knowledge of results and positive reinforcement.

2. Minimum reinforcement delay.

3. Elaboration of complex behaviour by breaking it down into small parts.

Behaviourists emphasize behavioural goals in education. They emphasize declaring goals as overt behaviour that can be witnessed and quantified. Teachers are vital in selecting what behavioural changes learners should exhibit and how to educate them.