A Learner-Centered Instructional Design Model for Distance Learning

Jianhua Liu
Virginia Polytechnic Institute and State University

Abstract

Learner-centered instructional design places students’ learning needs in the center of the instructional design process. In the learner-centered instructional design model for distance learning, learners’ motivational and affective needs are emphasized; steps of creating a learner-centered environment that supports learning strategies are described. This model provides a practical framework to guide the design of learning products for distance education that allow learners to actively construct knowledge and empower students to achieve learning objectives.

Introduction

Instructional design and learning are two different processes, but both relate to and influence each other. Instructional developers produce learning products, such as lessons, courses, and learning environments. Learners interact with learning products to acquire knowledge, skills, and competences (Jonassen, Davidson, Collins, Campbell, & Haag, 1995). The relationship between instructional design and learning is depicted in Figure 1. Learning products directly influence the effectiveness of learning. Different learning perspectives lead to different instructional design principles and processes. The instructional designer should be aware of the guidance of instructional design principles in the learning product design process.

In teacher-centered instruction, teachers control the teaching and learning process (Figure 2). Teachers select media and instructional strategies to present content information and motivate students to learn. An instructional product based on teacher-centered paradigm may benefit some learners but not others. This can be particularly challenging in developing products for distance learners, whose characteristics are diverse. They have different ages, interests, cultural backgrounds, technological skills, learning styles, and prior knowledge.
In distance learning, it is better to allow students to control the learning process due to diversity of learner characteristics as well as time and locations. In learner-centered distance learning (Figure 3), students need motivation in learning and use learning strategies to interact with media that present learning content. Information may be pushed to students via media or students actively pull information.

Learner-centered instructional design places students’ learning needs in the center of the instructional design process, and will more readily adapt to the diversity inherent in groups of distance learners. The principle of learner-centered instructional design is that the design is based on learner’s learning needs, and is for facilitating target learners to achieve learning objectives. The learner-centered instructional design paradigm focuses on the following issues.

- Effectively motivate students to start learning, persist in the learning process, and continue to learn
- Effectively present information (push and/or pull information)
- Effectively provide and support students’ learning strategies
- Effectively assess students’ learning outcomes

A Learner-centered Instructional Design Model for Distance Learning

The learner-centered instructional design model for distance learning includes five concurrent, overlapping, and recursive components: Understanding learning needs, Analyzing task and Developing learning objectives, Creating a learning environment, Developing learning assessment, Evaluating and revising learning product (UADCDE) (Figure 4). The UADCDE model specifically focuses on the process of designing lessons and courses for distance education.

Understanding Learning Needs

Understanding learner’s learning needs is a fundamental step for instructional designers to create effective and efficient learning products. In order to understand learning needs, it is necessary for instructional designers to analyze context as well as learner characteristics, motivational and affective needs, and learning strategies.

One important issue in distance education is determining learner motivation. Different learners have different motivational needs while taking distance courses. Song (2000) identifies three types of motivation in web-based instruction: motivation to initiate, motivation to persist, and motivation to continue. Learners who take a distance education course need motivation to initiate their participation in the learning activities, persist in the learning process, and continue to take other courses after they finish one course.

Learners’ affective needs are usually ignored in the instructional design process, partly because they are difficult to conceptualize and evaluate (Zvacek, 1991). However, learners’ affective states are closely related to their motivation, thereby influence learning. Thus, it is important for the designer to take these needs into account. One general affective need in distance learning is to know the instructor and other learners who are taking the same course. For example, learners in a course may want to know who the instructor is, what the instructor looks like, and the instructor’s qualifications for teaching the course.
Analyzing Task and Developing Objectives

Instructional designers conduct task analysis in order to develop learning objectives, learning environments, and learner assessments. Learning objectives tell students what they need to learn and what they will be able to perform as a result of the learning process.

Creating a Learning Environment

A learning environment refers to “a place where people can draw upon resources to make sense out of things and construct meaningful solutions to problems” (Wilson, 1996, p. 3). A learner-centered environment enables students to construct meaning through their prior knowledge, beliefs, and cultural practices (Bransford, Brown, & Cocking, 2000). The design of a learning environment relates to learning objectives, learner characteristics, and learners’ needs. If motivational strategy and learning strategy support are embedded in content presentation, it will help students overcome barriers in their learning process. Figure 5 presents an example of combining content delivery with motivational strategy and learning strategy support. The creation of a learning environment for distance learning includes selection of delivery methods, selection of instructional methods, design of motivational strategies, design of learning activities, development of learning resources, and design of communication patterns.
Figure 5. An example of combining content delivery with motivational strategy and learning strategy support.

Selection of delivery methods. Delivery systems are used to provide learning content and support communications in distance education settings. Delivery methods should facilitate achieving learning objectives, support communications, be appropriate for adapting to learners’ characteristics and needs, and be easy to set up and maintain (Mehrotra, Hollister, & McGahey, 2001).

Delivery methods in distance education can be synchronous or asynchronous. In the synchronous mode, learning products are delivered to and received by the learners at the same time. Examples of synchronous delivery technologies for distance learning include radio and television broadcasts, two-way audio, and interactive television. In the asynchronous mode, the delivery and reception of learning products occur at different times. The common asynchronous delivery technologies for distance learning include printed materials, audio/video recording, and the Internet.

Selection of instructional methods. Instructional methods are “strategies or techniques used to facilitate intended learning outcomes” (Head, Lockee, & Oliver, 2002, p. 262). Examples of instructional methods for distance learning include lecture, questioning, demonstration, discussion, group project, peer teaching, and role play. The selection of instructional methods in distance education should consider the learning objectives, learner characteristics, and delivery methods.

Design of motivational strategies. One important aspect of learner-centered instructional design is learner motivation. Keller’s (1987a, 1987b, 1987c, 1999) Attention, Relevance, Confidence, and Satisfaction (ARCS) model and Wlodkowski’s (1999) time-continuum model are two practical frameworks that guide the systematic
process of motivational design and motivational strategy selection. Motivational and affective strategies used in distance learning environments should motivate learners to start learning in the environment, persist in the learning process, and continue to study another course after they finish one course (Song, 2000).

Design of learning activities. Learning activities should be designed to encourage learners to actively participate in the learning process through meeting their motivational and affective needs and supporting their learning strategies.

Development of learning resources. Learning resources are the primary sources of knowledge in distance learning. Examples of learning resources include instructional materials, discussion boards, and information on the Internet.

Design of communication patterns. Interaction among learners and instructors is important for successful distance learning experience. Communication patterns can be synchronous (e.g., telephone, instant messenger, online chat, and videoconferencing) or asynchronous (e.g., email and discussion board).

Developing Learning Assessment

Assessment in education traditionally focuses on the evaluation of learners’ retention of knowledge and its applications in limited contexts (Reeves & Okey, 1996). The assessment in learner-centered learning environments emphasizes evaluating learners’ meaning-making process and performance. The development of learner assessment connects with the learning objectives, learner characteristics, learning environment, and student learning experience. Learning outcomes are directly measured with students’ work, such as portfolios, projects, and presentations. It is better to design multiple assessment formats to allow students reflect their multiple aspects of intelligence.

Evaluating and Revising

The evaluation in the UADCDE model includes formative and summative evaluation. The evaluation of learning products includes four themes. First, are learners’ learning needs completely understood and included in the learning product? Second, are learning objectives designed appropriately? Third, is the learning environment effective for facilitating learners’ knowledge construction? Fourth, is the learning assessment designed appropriately based on the learning objectives, learner characteristics, and the learning environment?

Based on the feedback and evaluation results, all weaknesses found in the steps of understanding learning needs, analyzing task and developing objectives, creating a learning environment, and developing learning assessment will be revised to improve the quality of the learning product.

Conclusion

Learner-centered instructional design emphasizes meeting students’ learning needs in the learning product design process. In the learner-centered instructional design model for distance learning, learners’ motivational and affective needs are emphasized; steps of creating a learner-centered environment that supports learning strategies are described. This model provides a practical framework to guide the design of learning products for distance education that allow learners to actively construct knowledge and empower students to achieve learning objectives.

References


