Curriculum Development in Practice: Integrated Course Design

Interview and Research Assignment

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Curriculum Development in Practice: Integrated Course Design

Designing curricula for training, courses, or programs of study is a significant undertaking requiring careful consideration of the activities and assessments that will lead the learner to successfully achieve an outcome.  While there are a variety of ways to approach the process of curriculum design, it is essential that the designer employ a conceptual framework or model, which details the requisite steps in the design process, to ensure the curriculum will be effective.  Instructors across different disciplines and institutions may prefer particular theoretical frameworks, as the characteristics of the learner critically influence the suitability of any given model.  The integrated course design model popularized by L. Dee Fink (2003) is a particularly effective model for postsecondary students, who need to understand not only what they are learning but why they are learning it; they need to relate activities to outcomes to see the value in said activities (B. Davies, personal communication, May 1, 2014).  The integrated course design model includes three main components: course outcomes, feedback and assessment, and teaching and learning activities.  Fink (2003) asserted that each of these components must connect to produce a relational, integrated model rather than a linear one.  To create an integrated curriculum a designer must work through the design process and steps of the Fink (2003) model systematically.  The use of this model allows the designer an opportunity to evaluate whether the components align and support one another to produce an integrated design, which ultimately benefits the learner and their capacity to successfully reach and achieve the outcomes of the instruction.

According to Morrison, Ross, Kalman, and Kemp (2011), the instructional design process is focused on what the learner needs to know, avoiding unnecessary or irrelevant information (p. 3).  Any effective curriculum has the needs of the learner at its centre; the designer's task is to

first determine what the student is expected to know or be able to do at the end of the course (B. Davies, personal communication, May 1, 2014). This practice of beginning the design process with the expected or intended student outcomes is often referred to as backwards design (Fink, 2003, p. 4-5). In backwards design, the designer works sequentially in reverse from the course outcome to develop the teaching and learning activities that will lead a student to reach the articulated outcome. Backwards design is not unique to the integrated course design model, but is a feature of many design frameworks. Ralph W. Tyler's well-known curriculum model similarly focuses on setting objectives for the learning and creating learner experiences within the curriculum plan (Antonelli, 1972, p. 129-130). For the purpose of this paper, objectives or goals will be referred to as course outcomes: that which the learner is expected to know or do upon course completion.

In order to identify course outcomes, a course designer must account for what Fink (2003) refers to as situational factors. These factors include considerations of the course's specific instructional challenge; student, institutional, and industry expectations; the course's sequence and role in the larger program context; and the type of prior knowledge the students bring to the course (Fink, 2003, p. 4-5). According to Morrison et al. (2011), a useful method of ensuring one captures all the relevant situational factors is to conduct a needs analysis (p. 11). A needs analysis is a purposeful scan of the instructional problem or goal and the audience of learners. For example, if one was to design a course on Cardiopulmonary Resuscitation (CPR) for lifeguard certification, a needs analysis would reveal that students must learn the steps to conduct airway, breathing, and circulation checks, as well as chest compression and artificial resuscitation techniques. The needs analysis would also identify that the lifeguards are of a certain age range, have completed a prior series of courses in order to be eligible for the

certification course, and can be expected to arrive at the course with a base knowledge of water

safety and rescue protocols.  Morrison et al. (2011) noted that the needs analysis provides the

designer an opportunity to identify the target audience in order to design appropriate

instructional materials and strategies for the learners' age, skill, or prior knowledge.  An

additional important element in determining course outcomes is the identification of the

outcome's learning domain and level of performance.

There are several widely accepted learning domains, or categories of learning skill, that

are identified in Bloom's Taxonomy: cognitive, affective, and psychomotor (Fallahi &

LaMonaca, 2009; Morrison et al., 2011).  A vital step in shaping course outcomes is to classify

each outcome into one of these domains.  Such classification forces the designer to think

critically about the teaching and learning activities and assessments that build toward that course

outcome, to ensure that each is built within the same domain (B. Davies, personal

communication, May 1, 2014).  Similarly, the designer must identify the level of performance

expected of the learner when they reach the course outcome; that is, to what extent is the learner

expected to demonstrate knowledge or perform behaviour.  In Bloom's taxonomy, these levels of

performance are known as levels of cognition and include knowledge, comprehension,

application, analysis, synthesis, and evaluation (Fallahi & LaMonaca, 2009, p. 73-4).  According

to the principles of backward design, the course outcomes influence and shape the instructional

strategies that will sequentially be designed next.

At the postsecondary level, within the Ontario college sector, course outcomes are

informed by Program Vocational Outcomes, which are set by the Ministry of Training, Colleges,

and Universities for every approved program of study (B. Davies, personal communication, May

1, 2014).  Additional considerations can be industry or accreditation body standards for programs

that include vocational testing, and Essential Employability Skills, a set of Ministry-determined

soft skills that students in any college program will develop through the course of their program

of study.  The course outcomes have been fully considered and can be written once the designer

has reflected upon what students need to know and achieve, conducted a needs analysis for

situational factors and audience characteristics, and determined the domain and level of

performance.  Within the college sector, the average credit course will have three to five course

outcomes that articulate the level of performance (B. Davies, personal communication, May 1,

2014).  Once the outcomes have been written, the designer must move on to the next step in the

integrated course design model, feedback and assessment procedures.

Feedback and assessment refer to the deliberate opportunities within the curriculum plan

for students to demonstrate their knowledge and the progression of their learning, and to receive

the instructor's feedback, whether it be praise, comment, or correction, of their work towards the

course outcomes.  Morrison et al. (2011) argued that the purpose of evaluation is to determine

the extent to which objectives are attained, and as such, assessments used to inform the

evaluation should have a direct relationship with the objectives.  The feedback and assessment

tools are designed early in the process because the alignment of outcomes and assessment is

critical to the success of the integrated course design.  Often, instructors do not consider

evaluative instruments until they have designed all other components of the course, resulting in

assessments that do not evaluate outcomes at the stated domain or level of performance (B.

Davies, personal communication, May 1, 2014).  This failure to interrelate causes a break in the

integrated course design; when any two components fail to integrate, it is typically the case that

the connections between all three components are broken (B. Davies, personal communication,

May 1, 2014).  To preserve the integrity of the integration model, feedback and assessment are thus developed sequentially from the course outcomes.

According to Fink (2003), a learning-centred course needs to go beyond traditional examinations that evaluate whether students can recall content (p. 13).  Educative assessment in a learning-centred course enhances the quality of student learning through four key components: forward-looking assessment, criteria and standards, self-assessment, and 'FIDeLity feedback' (Fink, 2003, p. 13).  Forward-looking assessment is that which incorporates problems or exercises within a real-world context (Fink, 2003, p. 13).  The term is so coined because it requires instructors to look beyond the time boundaries of the course and consider the learners' application of their acquired knowledge in future situations.  Again, the integrated design model reflects the Tyler curriculum model, which emphasizes that "if evaluation was to reflect the effectiveness of the purpose, objectives, and experience of the curriculum, then evaluation had to measure the success of objectives as they related to the total effectiveness of the curriculum process" (Antonelli, 1972, p. 131).  Forward-looking assessment aligns with Tyler's concept of evaluation as more than a testing procedure to be administered at the conclusion of an instructional course of study (Antonelli, 1972, p. 131).  Fink's (2003) second component of learning-centred evaluation, criteria and standards, refers to the traits or characteristics of high quality work or performance, and the acceptable level of such work or performance; that is, what the work will look like and how good it will be.  Self-assessment refers to opportunities for students to evaluate their own performance by conducting self-checks or appraisals; and FIDeLity feedback is Fink's (2003) term for high quality instructor feedback that is frequent, immediate, discriminating, and loving (p. 14).  Once the designer has developed instruments and

tools to provide feedback to students and assess their achievement of the course outcomes, work

on the third component of integrated course design, teaching and learning activities can begin.

Integrated course design considers the teaching and learning activities of the course as the steps

that students need to take to reach the level of performance expected at the course outcome ((B.

Davies, personal communication, May 1, 2014).  It is useful to conceptualize the integrated

course design model as a pyramid with the course outcome at the top, the teaching and learning

activities on the bottom left, feedback and assessment on the bottom right, and a staircase on

both sides leading to the course outcome.  In this way, one can view both the teaching and

learning activities and the assessment instruments as requiring the purposeful ascension of

students sequentially up a staircase to outcome achievement (B. Davies, personal

communication, May 1, 2014).  The curriculum's teaching and learning activities should build on

one another and scaffold the student's learning; successful design in this component will ensure a

well-integrated course where the activities mount successively toward the course outcome.

Ralph W. Tyler's curriculum model again aligns with Fink's (2003) concept, as Tyler

emphasized designing curriculum consciously around the concepts of continuity, sequence, and

integration (Antonelli, 1972, p. 129-130).  Continuity, sequence, and integration complement the

laddered or stepped design of Fink (2003), as both models emphasize the need to design teaching

and learning activities to consistently move students forward on the path to course outcome

achievement.

Fink (2003) asserted that teaching and learning activities in the post-millennial age

should focus on active learning strategies to support knowledge retention (p. 16).  Active

learning was articulated in Tyler's model as learner experiences; both models stress the need to

have students engaged in learning through the use of dynamic, real-world context.  Morrison et

al. (2011) similarly defined active learning as the process by which learners construct meaningful

relationships between the new knowledge presented in the instruction and their existing

knowledge (p. 150).  In integrated course design, active learning involves students both doing

and thinking about the things they are doing, such as debates, simulations, and group problem

solving exercises (Fink, 2003, p. 16).  Fink (2003) further argued that learning activities should

be guided by two principles: including active learning activities from three realms, experience,

information and ideas, and reflective dialogue; and finding direct as opposed to indirect or

vicarious forms of active learning (p. 17).  Viewing active learning from the perspective of these

two principles reflects a holistic view of active learning that values actual or simulated doing and

observing, online and in class access to primary and secondary information resources, and

portfolios, papers, and journals about the subject matter and the learning process (Fink, 2003).

The learner's prior knowledge is an important consideration that stems from the audience

and needs analysis conducted in the first component of integrated course design.  An accurate

assessment of this element is critical when it comes time to design teaching and learning

activities because the instructor must sequence the activities in a cognitively manageable way for

the learners; that is, activities must build on prior knowledge and new knowledge acquired

within the course within a reasonable step.  Morrison et al. (2011) referred to this construct as

step size: jumps or transitions between ideas that presume familiarity with background

information (p. 207).  There are two strategies to control the effect of step size on a learner:

consistency and pacing.  Consistency refers to the regular use of the same terminology

throughout the instruction and making explicit references back to what the student has previously

learned (Morrison et al., 2011, p. 207-8).  Pacing refers to how quickly instructional materials,

whether text, lecture, or active learning elements, are presented.  Pacing is a function of the

number of examples, problems, interactions, or exercises presented with an idea; if the pace is too rapid, the learner can be overwhelmed (Morrison et al., 2011). According to Fink (2003), instructional strategies should be designed as "a set of learning activities arranged in a particular sequence so that the energy for learning increases and accumulates as students go through the sequence" (p. 27). One of the goals of the integrated course design model is to create a sequence of activities that build on each other, such that step size is carefully managed to enable students to successfully climb each step on the pyramid to the course outcome achievement. According to Morrison et al. (2011), if the strategy has been designed well, the performance level specified in the course outcome will be reflected in the teaching and learning activities designed to support that intended performance. Integrated course design supports the arrangement of active teaching and learning activities in a sequence that aligns with the course outcomes and assessments.

Integrated course design is one model, or conceptual framework, for designing effective, learner-centred curriculum plans. The model is based on three major components: course outcomes, feedback and assessment, and teaching and learning activities. The integration principle, reflected by both Tyler (Fallahi & LaMonaca, 2009) and Fink (2003), emphasizes the intentional connection and alignment of the three components. The model is particularly effective for designing postsecondary courses or programs because it reflects the needs of adults learners to relate teaching activities to outcomes to see their value (B. Davies, personal communication, May 1, 2014). Fink's (2003) model is both relational and integrated; curriculum that is designed through the effective use of this model can easily be dissected to view not only the component parts but also the relationships between each. Integrated course design reflects many of the principles of other commonly used design frameworks in a learner-centred model. Given the model's ability to be both adaptable and flexible to context-specific situational factors,

the availability and popularity of new and emerging instructional materials and techniques, and

the changing needs of learners in the future, it can be considered an ideal model for

postsecondary curriculum design.

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