Managing The Curriculum

Salwa¹*, Sri Kamaliasari², and Titin Sumarni³

¹Salwa, STAIN Bengkalis
²Sri Kamaliasari, STAIN Bengkalis
³Titin Sumarni, STAIN Bengkalis

salwapku@gmail.com, srikamaliasari@gmail.com, and titinijal@gmail.com

*Corresponding Author
Received: 11 October 2016, Accepted: 4 November 2016
Published online: 14 February 2017

Abstract: This paper describes general guidelines for managing curriculum. Managing a curriculum change is a complex problem. There are two frameworks supporting the process. The first is a learning framework centered on how students learn, the second is a conceptual framework enabling the detailed design of learning activities, which implies a change in attitudes towards teaching. The last step is implementing the curriculum. We think that these guidelines may help schools or universities manage their own change process. Construction management education needs a curriculum model that will help school or university to achieve and maintain relevant construction management programs. This paper describes a curriculum model that integrates curriculum development, instructional design, and program evaluation.

Keywords: Curriculum process; learning activities; teaching and learning environment; evaluation process.

1. Introduction

Construction curriculum in education is not new. It has been a part of the practical aspects of programs for many years. According to Tyler (1975) Theoretical Discussion of Model identified four fundamental principles to be addressed when developing a curriculum and plan of instruction. These principles are:

1. Define appropriate learning goals and objectives.
2. Establish useful learning experiences.
3. Organize learning experiences to have a maximum cumulative effect.
4. Evaluate the curriculum and revise those aspects that did not prove to be effective.

In order to plan and develop an educational program, it is vital that a goal be established to guide instructors toward the criteria for designing courses, selecting instructional materials, developing instruction, and evaluating the effectiveness of the program. Without a target, instructors may simply point their subject matter weapons and fire blindly, seeking to fortify bomb the students with information. Tyler advocated identifying effective learning experiences that support program goals and course objectives. Among these learning experiences that apply to construction management curriculum are experiences to develop critical thinking skills, acquire information, develop social attitudes, and develop interest. For each content area, these experiences may vary, but when properly designed should lead to effective learning.

After the overall curriculum has been considered, instructional design is formulated. Clark (1995) explained the instructional design process as similar to a typical business system composed of input, process, and output. Inputs for an academic program are the students who need to acquire knowledge and skills.

The Instructional Systems Design (ISD) model includes five phases: Analyze, Design, Develop, Implement, and Control (Clark, 1995).
Kirkpatrick (1994) developed a four-level approach for evaluation that addresses reaction, learning, behavior, and results. These evaluations are ordered in sequence, with succeeding evaluations presenting more feedback information. Reaction measures learners’ perceptions and attitudes toward the learning experience. Reaction reveals what the learner thought of the program, including materials, instructor, facility, content, and methodology. Learning is measured by the learning objectives with concern toward facts, techniques, and skills obtained. This measurement may be a written test, skill practice, or job simulation.

The third level, behavior, measures the extent to which the knowledge and skills learned in the program have been transferred to the learner, and whether the learner can demonstrate this fact. Evaluations include observations from the instructor. When graduates of the program obtain employment in the field, employer evaluations may be included.

The fourth level is results. This level of evaluation is the highest in the hierarchy. It addresses whether the instruction has met an organization’s business need. Results evaluation helps determine the return on the educational investment. The model presented in this paper combines the overall concepts of the above models to provide university faculty with a single source, systematic approach to implement when developing a program.

2. Content

An Integrated Model

In order for construction management programs to prepare graduates to meet the needs of the dynamic construction industry, construction management education needs a curriculum model that will help schools or universities to achieve and maintain relevant construction management programs. No longer should university faculty rely solely on accreditation requirements and their limited industrial experiences to develop curriculum.

However, this endeavor can be accomplished by using a curriculum model that integrates curriculum development, instructional design, and program evaluation. The intent of an integrated model is to provide a single source, systematic approach for school or university to implement when developing a program.

### Phase I Analyze

- Analyze job
- Select tasks / functions
- Construct job performance measures
- Analyze existing courses
- Select instructional setting

### Phase II Design

- Develop objectives
- Develop tasks
- Describe entry behavior
- Determine sequence and structure

### Phase III Develop

- Specify learning events / activities
- Specify instruction management plan and delivery system
- Develop instruction
- Validate instruction

### Phase IV Implement

- Implement instructional management plan
- Conduct instruction
- Phase V Control
- Conduct internal evaluation
- Conduct external evaluation
- Revise system

Kirkpatrick (1994) developed a four-level approach for evaluation that addresses reaction, learning, behavior, and results. These evaluations are ordered in sequence, with succeeding evaluations presenting more feedback information. Reaction measures learners’ perceptions and attitudes toward the learning experience. Reaction reveals what the learner thought of the program, including materials, instructor, facility, content, and methodology. Learning is measured by the learning objectives with concern toward facts, techniques, and skills obtained. This measurement may be a written test, skill practice, or job simulation.

The third level, behavior, measures the extent to which the knowledge and skills learned in the program have been transferred to the learner, and whether the learner can demonstrate this fact. Evaluations include observations from the instructor. When graduates of the program obtain employment in the field, employer evaluations may be included.

The fourth level is results. This level of evaluation is the highest in the hierarchy. It addresses whether the instruction has met an organization’s business need. Results evaluation helps determine the return on the educational investment. The model presented in this paper combines the overall concepts of the above models to provide university faculty with a single source, systematic approach to implement when developing a program.
developing a program. Because most construction management school do not formally document and employ systematic methods of curriculum development, instructional design, or program evaluation, the model combines these important phases. The phases are independent, yet are sequential. The model sequence is Goal Definition, Job Description, Competency Identification, Course Design, Instructional Development, and Program Evaluation.

**Goal Definition**
The goal of most construction management programs is to prepare graduates with the requisite knowledge and skills. While this goal is a good beginning, further goal definition leads to the intended construction category on which the program will focus. The program goal serves as a map to guide school through the remaining phases.

**Job Description**
The job description is a general explanation of what a person does and in what environment that person works. The job description phase involves specifying the type of construction profession for which the program will prepare graduates. Within the general construction categories are various groups of construction professionals, including general teacher, design-build teacher, and construction managers of curriculum. Because construction firms tend to provide more than one service and perform multiple types of projects, programs should prepare graduates with the knowledge and skills to function in a variety of construction groups. The fundamental duties of a construction manager are similar regardless of the specific group, so programs that prepare graduates in the basic principles of managing construction curriculum will fulfill their goals.

**Competency Identification**
Developing a program of study for a technical area based on competencies is a technique that has been used for many years. According to Selvidge 1930, the first step is to determine the goals of the program, which comprise “the information skills, attitudes, interests, habits of work we expect the boy to have when he has completed his period of training”.

**Course Design**
The concept of designing courses is familiar to any school or university member. All faculty have become accustomed to designing courses around a set of objectives. To avoid designing courses based blindly on past practices, the course design phase uses the competencies determined during the previous phase. Competency statements guide school to develop individual course objectives that result in students being able to meet the competency statements. Objectives should be specific, measurable, and realistic given the time allotted to a course offering. Based on the instructional systems design (ISD) model, objectives are composed of three parts: task or observable action, standard/criterion, and conditions.

To measure the accomplishment of objectives, tests will be developed. Test formats may be written tests, performance tests, or a combination of the two types. To truly measure the impact of the learning process, both pre-tests and post-tests should be developed. The Knowledge Areas previously discussed serve to guide faculty in developing the curriculum.

**Instructional Development**
The instructional development phase involves specifying learning activities, selecting course materials, developing the instruction, and sequencing. Learning activities should be selected to best assist learning and to fulfill objectives. A variety of activities should be developed to address the competency statements, dealing with knowledge areas and skill areas. Activities should include those that students perform individually and in teams in order to best reflect the multidisciplinary nature of the construction curriculum. Learning materials should reflect recent advancements in materials, and management practices. Because printed textbooks are quickly outdated, learning materials should include periodicals, according to Dick (2005) states that web based sources, and case studies which are timeless. Particular care should be taken to select the best materials. Too often faculty have been
Managing the Curriculum

accused of poor teaching and students of inadequate learning when the cause was actually inadequate materials

**Program Evaluation**

Program evaluation as the purpose is to improve the program from effectiveness of instruction and effectiveness of materials. Internal evaluations will be conducted to monitor the instructional process, which infers that the evaluation will be performed during the instructional process.

External evaluations are included to provide feedback on the results of the level and quality of learning. In construction management programs need to provide relevant education that keeps pace with the dynamic construction in curriculum.

3. Managing Curriculum Change

A major innovation in a curriculum is a complex process that requires a meticulous planning and sustained efforts. If developing a curriculum is important, its implementation and evaluation are equally as significant. Care should be taken throughout all stages of the process to ensure that the difficulties associated with managing change are not underestimated; strategic planning is essential. It is crucial to foresee mechanisms for regulating the implementation of any innovative program.

Firstly, an objective, detailed assessment of the situation must be carried out: analyze the strengths and weaknesses of the current program; analyze the context in which the program evolves; analyze internal and external forces acting on the program, opportunities, and challenges in the context.

Secondly, what the organization intends to do in following up the results of the analysis must be expressed in a mission statement. That means clarifying what you wants to do by formulating objectives in terms of measurable results. The mission statement is extremely important; it must reflect a broad consensus that is shared and supported by all stakeholders, the various university decision-making authorities, students, and employers.

Thirdly, an action plan must be established to determine and prioritize the mission’s development strategies. The resources required for the project’s success must be sought out and located. This plan must follow a schedule that is slack enough to take into account the resources and the specific development context, but tight enough to sustain maintain mobilization for the mission and project for change.

The fourth phase is the curriculum-detailed design and its implementation. Although not necessarily the longest phase, it surely mobilizes faculty the most. It’s at this juncture that the learning and conceptual frameworks discussed above are selected and developed. This is a complex task requiring constant teamwork from faculty. Often, an innovative curriculum project comes along with important changes to educational practices, such as tutorials, design studios, and cooperative learning. In many cases, before the new program can be implemented, faculty members and teaching assistants must be given special training organized by university educational support service in these new practices and differences in assessment that they entail. The issue remaining to settle at the end of this phase is how to make the transition from the old curriculum to the new smooth. Should the change begin with a freshman class? Should a pilot group of freshmen or the whole class be involved? The answers depend on the extent of the reform, its nature, and the local context. In any event, current students should be taken into consideration, because they can perceive their program as being “second rate” and feel that all the resources are being allocated to the new curriculum.

Fifthly, monitoring tools must be designed and implemented. These tools need to be conceived with a dual objective: a) measuring program quality program, at first locally (Does each activity contribute to meeting program objectives?) and then globally (Does every graduate have all the attributes targeted by the program) and b) providing for immediate feedback to identify and correct student learning difficulties or any deviation from the program’s educational principles. These mechanisms are essential to improve the new program through a formative evaluation and feedback process during implementation. If the new program calls for new learning methods, such as self-learning, teamwork, and tutorials, support resources and special training workshops must be put in place to guarantee their success use.

Implementing the plan does not guarantee success or level the obstacles arising from resistance to change. On the other hand, it serves as a reminder of the shared vision underlying the
Managing the Curriculum

project, provides a reference framework for all stakeholders, provides tools for assessing new practices, and makes it easier to document the process.

4. Conclusion

The purpose of managing curriculum is to help ensure that all students will get the most out of their education. The more global goal of curriculum management is for students to use all the knowledge and skills they have learned to contribute to society in a meaningful and beneficial way. All stakeholders in any given school district contribute in ways that help to see to it that curriculum management is carried out, as best as possible.

Curriculum is the academic system that imparts knowledge and skills to students in a school environment. More specifically, curriculum refers to what is written to be taught, and what is tested at different student levels, in specific areas or schools. After evaluating test results, administrators and boards can determine what are the most effective methods for imparting knowledge to students.

Curriculum monitoring and evaluation are closely related. Administrators monitor curriculum delivery to ensure that it is taught in a way consistent with the design. Teachers, administrators, school board members, and parents all make assessments about the effectiveness of the curriculum in place. Data derived from their input is then used to make any changes that will either lead to more effective teaching, based on the present curriculum, or to other modifications that will improve the curriculum.

With curriculum management, school is aligned. Alignment refers to the coordination of the writing, teaching, and testing of curriculum across grade levels and areas of study. Written curriculum, which is part of alignment, refers to stated learning goals, as well as methods and resources that educators are to employ to reach those goals. The written curriculum typically includes a statement of assessment tools that might be used to evaluate students’ learning, and thus, the value of the curriculum.

Taught curriculum refers to the teacher’s delivery of the curriculum to the student, according to how it has been written. Teachers formulate the units to be studied, as well as the supporting lesson plans. Approaches for presenting materials to students is also a part of the taught curriculum. Tested curriculum refers the parts of the written and taught curriculum that are assessed, whether formally or informally. It determines if a student has thrived on the basis and implementation of the written curriculum.

References