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Curriculum Design Framework in the Digital Age

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Introduction

Constant technological changes, especially the adoption of learning management systems, have been significantly altering higher education curriculum environment and practice. Research on effective design frameworks and principles for technology-based instructional environments is crucial to meet the growing needs of online curriculum and to maximize corresponding investment. The purpose of this poster is to propose a design framework to help curriculum designers and developers plan their curriculum in ways that embrace new technologies and cope with the design complexity.

> Education is a process of changing the behavior patterns of people. This is using behavior in the broad sense to include thinking and feeling as well as overt action. When education is perceived in this way, it is clear that educational objectives, then, represent the kinds of changes in behavior patterns of the students which the educational institution should seek to produce. – *Ralph Tyler*

Traditional View of Curriculum Design

Several curriculum design models have been proposed in the last century. Among these models, Ralph Tyler's model represents as the most classic one for curriculum design and plan of instruction. As described in his well-known book, *Basic Principles of Curriculum and Instruction*, Tyler (1949) summarized four principles of curriculum design:

1. What curriculum objectives need to be attained?
2. What learning experiences should be selected to achieve those objectives?
3. How can these experiences be effectively organized (sequenced)?
4. How do we determine if the objectives are being reached?

The Tyler model has provided administrators, instructors, and designers a scientific tool to examine the problems of curriculum and instruction for more than half century. In our conventional practice, educators typically view the selection and organization of educational experience as a united component (e.g. experience or content). The traditional view of curriculum design is usually presented as the following curriculum triangle.

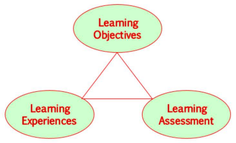

Figure 1. Traditional Curriculum Design Triangle

A Digital-age Conceptual Framework

While the essential focus of curriculum design and instruction remains on the three key components and their alignment: objectives, experiences, and assessment (e.g. English, 2000; Fink, 2003), educational contexts and specifications across the globe have changed rapidly. The following factors are worth our consideration when we plan curriculum and instruction:

1. Wide adoption of learning management system
2. The integration of technology into the curriculum
3. Social division of curriculum development
4. The pursuit of accessibility and usability
5. Attention to student attrition and retention
6. Emphasis on student self-directed learning

In order to be responsive to changing educational contexts, values, and expectations in the field, the following framework is proposed:

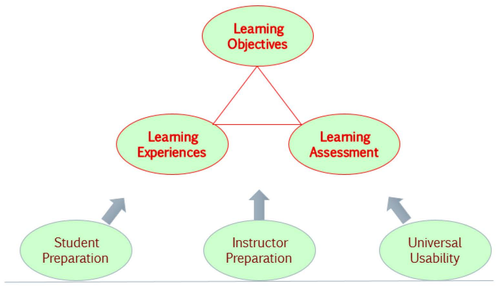

Figure 2. Digital-age Curriculum Design Framework

This new framework includes six steps of curriculum design:

- Step 1: Determine the learning objectives as required by curriculum standards, program specifications, and/or societal needs.
- Step 2: Determine learning experiences (materials, activities, tools, etc.) that help students to achieve the learning objectives desired, and organize those experiences into a logical, holistic, and development-appropriate format.
- Step 3: Determine the evidences which can be used for the evaluation of the objectives and create evaluation instruments accordingly.
- Step 4: Determine guidance and support that might facilitate student learning and promote learning independence, including a welcome letter, course orientation, tutoring process, study strategies, etc.
- Step 5: Determine guidance and support that might prepare and facilitate instructor teaching, including preparation guide, lecture notes, enrichment materials, etc.
- Step 6: Apply and integrate usability practice to promote the ease of use, satisfaction, and learnability of designed learning process and objects.

Application: Design Rubric as an Example

The framework provided in this poster can be applied in a variety of curriculum development and instructional planning issues. A year ago, the author was asked to lead a task force in creating a course design evaluation rubric. Instead of simply compiling all kinds of criteria we can find in the literature and put them together, the author thought about establishing a comprehensive quality assurance plan and using a more universal framework as described in the previous section to address course design and evaluation issues in the current higher education.

Based on the new framework, the task force created a design rubric to reflect our understanding about essential course quality components. This design rubric is developed based on the conventional curriculum development triangle as well as increased use of technology to deliver learning. The emphasis of this rubric is outcome-based learning, student-centered learning, and affordance of digital learning environment. The rubric consists of 6 key areas (general standards) and 28 specific review standards of course quality that define quality expectations. This rubric could serve not only as an evaluation tool to appraise the course under review, but also as a planning tool for a new course. And more importantly, the rubric could serve as a communication or collaboration tool for instructors, designers, and subject matter experts to discuss course design issues or course quality issues.

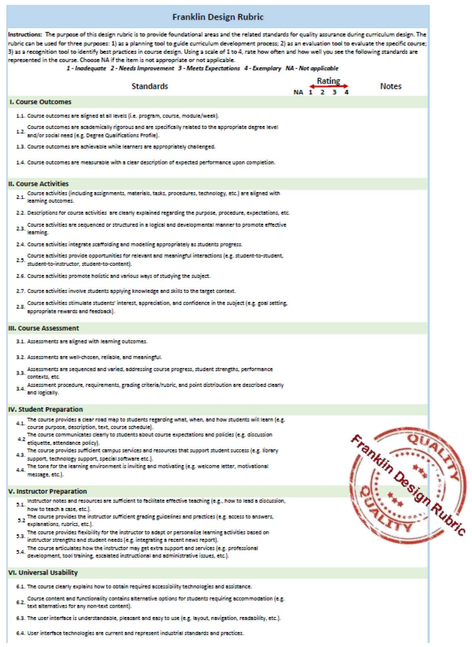

Figure 3. Franklin Design Rubric

Conclusions

In this poster, the author proposed an enhanced conceptual framework and use of a Franklin design rubric as an example to illustrate the proposed framework. The new design framework is intended to respond to the current and emerging educational situations and expectations.

The authors resonates with Duderstadt (1999)'s statement that "faculty members of the twenty-first century college or university will find it necessary to set aside their roles as teachers and instead become designers of learning experiences, processes, and environments" (p7). By using this design framework, we hope that the curriculum planning and design process is enhanced in the digital learning environment. We also hope the framework can inspire foundational areas and standards for quality assurance in higher education and other organizations.

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References

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