The Design of a Computer-Based Review for the ExCET

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To be certified as a teacher in the state of Texas a candidate must pass the Examination for the Certification of Educators in Texas (ExCET). Students today spend four years or more in education programs taking courses intended to prepare them to become teachers. At the end of the program students must pass a test such as the ExCET that is a prerequisite for becoming a teacher.

Texas is now holding the teacher education program responsible for the success of teacher candidates on certification examinations (Hernandez, 1999). Universities may lose their teacher certification programs if their students do not pass the certification tests. Because of these consequences, colleges of education are beginning to prescreen students who desire to enter their teacher preparation programs, requiring students to meet specific GPA and basic skills standards before being admitted to the programs (Hernandez, 1999). There is currently a shortage of certified teachers in Texas and prescreening students who desire to become teachers has the potential effect of eliminating some people who could become very good teachers. There is a need to develop a computer-based examination, that can be used to prepare students for the ExCET and to study the effect of this computer-based examination on their ExCET scores.

Books and Manuals do not provide enough interactive preparation for the ExCET. Most ExCET preparation manuals today include examples of ExCET tests. These tests encourage students to take the whole test first and then check their answers. These manuals provide detailed written explanations of the answers at the end of the test. In an inefficient manner, students must turn back and forth in these books if they want to check their answers.

Computers-based education allows students to quickly compare their responses to the correct answers. Computers do not ridicule student’s answers, and students can work at their own pace at each concept before they advance to the next. Computers can provide students instant feedback that can tell the student why their answer is right or wrong.

The purpose of the study was to design, develop, and evaluate a computer-based test that provides teacher education students with a review for the ExCET. The design and development process for the test was defined by a group of stakeholders that included the designer/programmer, teacher educators, an author of a print-based ExCET review, and teacher education students. This study provided information regarding the following concerns evolving throughout the development cycle: (1) content; (2) screen design; (3) feedback; and (4) evaluation.

The focus of this study was in four distinct areas: test design, test development, implementation of the test in an authentic context, and evaluation from students and faculty. The results are reported in both quantitative and qualitative measures that reflect feedback from surveys and test results. Constructivism was the foundation for both the design and development of the test, and participatory design guided the process.

The overarching principles of reflection and recursion were critical for this design model. Recursion provides the opportunity for stakeholders to revisit and rethink the
materials in a cyclical method throughout the development of the software. Reflection provides the opportunity for all of the stakeholders to think about and reflect on the design and development decisions that have been made and change them when needed.

The idea for the program originated as the competencies and domains were introduced to teacher educators. The teacher educators noticed a need for software that would help students prepare for the ExCET. The development of the program incorporated the suggestions, propositions, and plans of teacher educators making these contributors an important part of the project. The teacher educators grew from being contributors to become stakeholders in the project. Students who participated in the trials made many suggestions as part of a formative evaluation. These suggestions made many improvements to the program which made the stakeholders feel that the program was their program. Finally when one stakeholder suggested that the future version incorporate video, ownership was divided evenly by all the stakeholders. The project is now a very important part of the ExCET review.