**IRB Synopsis of Proposal**

Title: Problem Based Learning and College and Career Readiness Standards, Connecting Reasoning to Mathematical Content

1. Pre-service teachers taking CI 4343 and CI 4370 through the will be participants. Participants are studying to be teachers and will need to be familiar with the College and Career Readiness Standards as preservice teachers. This block of classes is taught in a high school environment where students have the opportunity to observe and teach simple lessons. They will be designing a unit and preparing lessons to be taught using the College and Career Readiness Standards.

2. When students are expected to design lessons the consent form will be explained to them and they will be given the opportunity to sign it. Classroom management is taught first with classroom observations included. See consent forms.

3. Research is both qualitative and quantitative. Test of Everyday Reasoning (reasoning skills) produced by Insight Testing with be administered to pre-service teachers. Understanding of Texas CCR tested using an instrument designed and tested by researcher is another tool to be used. Same test will be given as pre and post tests. Also student lesson plan will be evaluated based on their use of the Texas CCR standards. A Likert attitude survey, made and tested by researcher will be used to determine changes in attitudes. Sources for goal motivation and academic affect (Patterns of Adaptive Learning Survey (PALS) by Midgley and Ryan) will be adapted in designing instrument. All data will be collected using no forms of identification and kept in a secure location. 1. Can a course in designing PBL units improve understanding of Texas CCR and reasoning skills? (Quasi-Experimental Control Group Pretest Posttest design, other block class serving as control) 2. Can a course in designing PBL unit improve attitudes about using Texas CCR and teaching reasoning skills? (Quantitative analysis of means given as pre and post test.)

4. and 5. Some risk, discomfort, and inconveniences may arise from the testing situation. More time will be allowed if discomfort arises and the testing environment will be changed to provide more privacy. Participant’s efforts will benefit preservice teachers while hopeful improving their own knowledge CCR content and teaching practices.

6. Preservice teacher will become aware of state mandated College and Career Readiness Standards and how they will affect how and what they teach. They will also benefit by using them to prepare lessons. This will help them to be better teachers.

7. No compensation will be planned.

8. No risks in relationship to the anticipated benefits to the subjects and society.

13. Beth Bos and Texas Higher Education Coordinating Board will have access to the results of the study

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