**Item Analysis Training Efficacy**

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**A. PURPOSE, RESEARCH VARIABLES, AND POPULATION**

Purpose of the study

This student is designed to determine the efficacy of the item analysis training (professional development) provided to both pre- and in-service teachers. The study will involve K- 16 teachers as well as pre-service teachers who would normally participate in professional development related to the analysis of aggregate student response data from New York State Regents exams. The surveys will be distributed to physics teacher populations through courses and workshops.

Background

New York State has administered Regents exams since the mid-1800’s. Schools typically administer exams, but faculties frequently fail to examine student responses with respect to program improvement. Workshop and course presentations have been developed that are designed to foster faculty facility with the basic concepts of item analysis; trends and patterns are also discussed. The proposed study will address the efficacy of these presentations and discussions.

Characteristics of the Subject Population

a. Age Range – Pre- and In-service teachers will be included in the study. Ages will range from 21-70+ years.

b. Sex – There is no gender restriction to participation in this study.

c. Number – The preliminary study will involve between 50-250 subjects.

d. Inclusion Criteria – Only physics teachers, or pre-service physics teachers, will be included in the study.

e. Exclusion Criteria – Only physics teachers will be included in this study.

f. Vulnerable Subjects – Vulnerable subjects will not be included in this study.

**B. METHODS AND PROCEDURES**

Methods of Subject Selection – The subjects will be participants in regularly scheduled classes and in professional development sessions. Participants will be informed of the nature of the study.

Study Site – BSC classrooms, lecture halls, etc.

Methods and Procedures Applied to Human Subjects – Subjects will complete a pre-survey that asks them about their background (number of years teaching, areas of certification, subjects currently taught). The subjects will then rank 10 Regents Physics test items on a Likert scale (1 = easy, 3= difficult); the ranking will be based upon the anticipated difficulty for their students. Subjects will be asked to provide an explanation about why they believe that their students will find the items easy or difficult. A presentation about item analysis, and a discussion of recent exam results will be facilitated. Subjects will rank an new set of ten items after the discussion. The demographic questions, the pre and the post surveys will be stapled together into a single packet. The participants will not be identified beyond their teaching experiences, etc.

**C. RISKS/BENEFITS**

Potential Risks – The risks from this study are minimal.

Protection Against Risks – NA

Potential Benefits – The quality of the professional development sessions will be improved based upon the evidence provided by aggregate survey data. Different programs may be developed for pre- and in-service teachers.

Compensation for Participation – The participants will receive approximately one hour of professional development in assessment analysis and program review. Participants will receive regional rankings of item difficulties and response patterns for a recent Regents exam.

Alternatives to Participation – Students may opt to not participate.

Information Withheld – NA

Debriefing – A project report, as well as presentation materials, will be made available to study participants.

**D. CONFIDENTIALITY**

Participants will not be identified by name or number on any survey. Participants teaching experiences (number of years) will be collected; differences, particularly between pre- and in-service teachers will be analyzed. Survey data will be kept in secured filing cabinets or in secure computer files.

**E. COPY OF CONSENT FORM (IF APPLICABLE)**

See attached Sample Consent Form. Please note that an informed consent form addresses five critical points: 1) subject participation in the study is voluntary (provide a description of the procedure to be used if choosing not to participate); 2) a statement of the subject’s right to withdraw at any time and a clear description of the procedures for withdrawal from the study without penalty; 3) subjects are informed of the level of risk (from ‘minimal risk’ through the level appropriate to the study) and the means of protecting the subjects from known risks or minimizing the risk; 4) confidentiality is ensured; and 5) the means by which confidentiality is to be ensured is elucidated. While