*Collaborative Research: Automated Analysis of Constructed Response*

*Concept Inventories to Reveal Student Thinking: Forging a National*

*Network for Innovative Assessment Methods*

An NSF CCLI Phase II Project

EXTERNAL EVALUATION

**SUMMARY REPORT OF MIDPOINT PROJECT**

**PI INTERVIEWS**

December 2011-January 2012

Prepared by the External Evaluation Team

Science and Mathematics Program Improvement (SAMPI)

Mallinson Institute for Science Education

Western Michigan University

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AACR is a collaborative research project involving faculty and researchers from Michigan State University, Ohio State University, and the University of Colorado at Boulder. The goal is to explore whether automated text analysis is able to provide valid, insightful, and formative feedback to instructors in near real-time, permitting faculty to tailor instruction to student thinking patterns. The project directors believe that such advanced technological tools may allow for richer and more valid assessments than can be provided by using multiple choice concept inventories alone. AACR began in the Fall 2010 and continues through 2012.

As part of the external evaluation for AACR, SAMPI interviewed all eight (8) PI’s who form the project management team. The purpose of the interviews was to collect data related to the project’s impact on individual management team members; to gather their perceptions of the project’s progress to date and what steps need to be taken to reach completion; and to provide an opportunity for individual team members to express any concerns or suggestions for formative assessment about the project or any operational issues. Evaluator comments and a summary of their responses follow below.

**METHODS.** Members of the AACR project management team (n = 8) were contacted individually by email with a request to set up a time for the interviews, which were conducted by phone. When a time slot had been reserved for a participant’s interview, he/she was provided with a list of questions to review and think about prior to the actual interview. Interviews were conducted over the phone and lasted for no more than 45 minutes each. The interviews were all conducted between December 9, 2011 and January 9, 2012.

For more information about this report, contact Dr. Mary Anne Sydlik at Western Michigan University in Kalamazoo (Email: [mary.sydlik@wmich.edu](mailto:mary.sydlik@wmich.edu) or Phone: 269-387-3791).

**EVALUATOR COMMENTS**

The comments and suggestions that follow are intended as topics for discussion as the PI project team reviews accomplishments and plans for the future. These comments are based on a review of and reflection on what has been learned about AACR by evaluators from interviews conducted between December 2011 and January 2012 with individual members of the PI project team. Comments have been organized thematically.

*The PI project team:*

* The PI team represents a group of highly-dedicated science educators and researchers from diverse backgrounds and possessing varying skill levels in using the text analysis software.
* Most of the PI’s find the project intellectually stimulating and rewarding, and are actively engaged in the text analysis work.

*Progress Toward Project Goals and Objectives:*

* An attempt should be made to review and reflect upon the original project goals and objectives, progress made toward reaching those goals and objectives, and the target audience for project products.
* The team as a whole should discuss what needs to be accomplished between now and the end of the project and, in particular, devise a strategy to assist the researchers working on the genetics questions portion of the project. The latter will probably require more one-on-one work with the researchers and thus may mean more financial resources need to be expended for this to happen.
* There was a general sense that it is too early in the project to invite additional researchers to participate in the project, particularly since the researchers working on the genetics questions are still trying to get underway.
* The SPSS Text Analysis software is harder to use than those who are already familiar with it may think.
* The team should have a discussion about streamlining the process of how to integrate new people to using the text analysis software. Suggestions include text manuals, problem sets, and videos for how to use the software. Another idea to consider is assigning experienced members to work one-on-one with new people until they reach a level where they can work independently.
* The team is urged to provide some opportunities for those who are interested to explore using OSU’s SIDE software.
* An attempt should be made to actively include members of the team representing various content areas and levels of expertise into more active roles in the project.

*Publications:*

* Publications arising from the project clearly are an important motivating factor for many of the PI’s, students, and individuals holding post-doctoral positions.
* Thoughtful conversations should occur about ways to foster more opportunities for team members to work toward this goal, including the various students and individuals holding post-doctoral positions.
* Whenever members of the group decide to work on a potential publication, clear conversations should occur about authorship.

*Communication:*

* At the core of any effective collaboration is regular, on-going, and effective communication. AACR consists of a large and diverse project team, representing several institutions and a range of research interests and capabilities. It is important to maintain direct communication across all groups through face-to-face and real time electronic meetings.
* Those individuals joining the weekly PI meetings from locations other than MSU have expressed dissatisfaction with the meeting technology. A suggestion has been made that providing them with headsets may help.
* The group should also consider revamping the weekly PI meeting protocol in other ways as well: review and agree on how often to meet; consider varying the content in a predictable way (perhaps with a pre-arranged schedule of topics); or, at the minimum, distributing a meeting agenda far enough in advance that individuals can make informed decisions about whether to participate.

*Potential AACR Activities Beyond the Current Funding Period*

* It would be fruitful to spend some time, either at the upcoming face-to-face meeting or at one of the weekly PI meetings regarding future AACR collaborative activities beyond the current funding period.

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