Dr. Sean Sather-Wagstaff  
Department of Mathematics  
Minard Hall, Room 300  
NDSU Campus  

Dear Dr. Sather-Wagstaff:  

This letter contains a completed review for the assessment report that you submitted on March 12, 2009 on behalf of your colleagues in the Department of Mathematics and the Department of Mathematics Assessment Committee. That report represented activities conducted during the 2007 - 2008 academic year.  

This review, unfortunately, represents a singular perspective because a member of the University Assessment Committee was not available to provide a second, independent review.  

The initial impression of the current assessment report is that it represents a fresh approach, conveys the department’s interest in student learning, and speaks to each the questions asked by the members of the University Assessment Committee (What did you do? What did you learn? What will you do differently as a result of what you learned?)  

Strong assessment activities (assessments of what students know and can do) begin with an assessment plan and this report presents a plan that will “allow the department to amass a nontrivial amount of data”. Further, the plan indicates that “we expect that this will enable us to identify trends within the department”. Great!  

The first four points established as activities to be conducted in the future reflect logical steps and address traditional goals of assessment of student learning. Completion of these steps will, as recognized in the report, contribute to an enriched assessment plan.  

Assessment activities conducted in MATH 165 through MATH 266 were presented in this report. The methods used emphasized a modified form of item analysis of examination questions, scores on individual questions on final examinations. Extensive data were provided for essentially each section of each class represented by this report. Faculty responses addressing the questions of what was learned and what will be done differently provided insight into the philosophies of individual participants.  

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Dr. Sean Sather-Wagstaff  
August 6, 2009  
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A number of these reflective statements communicated faculty interest in enhancing student learning in the future. Some found that the experience confirmed beliefs about areas where students experienced difficulty while other comments noted surprise that students were having difficulty with certain types of questions.

Faculty comments about what will be done differently reflected not only interest in students, but identification of an array of approaches to enhance student learning in the future. (If only a vehicle could be identified for sharing the nature of the comments with colleagues in other disciplines!) The comments provided support for information provided in the ‘Levels of Implementation’ departmental self-evaluation.

The involvement of a graduate assistant in building the database is supported because of a concern that the committee members might otherwise become burdened (or overburdened?) with low-level activities that might be partially completed by the faculty. That said, the committee has made remarkable progress and that progress is appreciated!

“What next?” may be an appropriate question. The current information is summative and based upon analyses of scores (grades for individual examination questions). As circumstances permit, progressing to multiple measures of student learning that include formative and summative direct measures of student learning would seem to be logical.

The objectives outlined in the fifth activity of the assessment plan ((alumni surveys) address goals that typically are of programmatic interest rather than assessment of student learning. As such, they could be excluded from assessment reports. As a potential approach to reducing the length of future reports, it might be possible to eliminate the substance of individual questions (while retaining the other features) without loss of meaningful information.

Meaningful progress has been demonstrated in this report and additional progress, as described in the report, will follow. That progress will be eagerly anticipated!

The previous assessment report was an assessment plan and did not receive an evaluation because of limited experience (at that time) with evaluation of plans rather than reports. On that basis, the assessment report for the 2005 - 2006 academic year (an evaluation of 4.0) becomes the reference point for identifying enhanced departmental achievement in assessing student learning.
The current report earns an evaluation of 6.0 on the strength of implementation of an effective plan to assess student learning in undergraduate courses. Enhanced evaluations can be achieved through the inclusion of more than one semester of data for an academic year, the use of multiple, direct measures of student learning, and inclusion of graduate classes.

The members of the Department of Mathematics Assessment Committee are commended for their initiative and their leadership. The current achievements represent significant enhancements relative to previous activities. Thank you for those achievements!

Additional work lies in the future and where members of the University Assessment Committee or I might be of assistance, please contact me at your convenience!

Sincerely,

Robert Harrold
for the members of the University Assessment Committee

Attachments: Summary and graph.

Copy: Dr. R. Craig Schnell, Provost and Vice President for Academic Affairs
Dr. Kevin McCaul, Dean, College of Science and Mathematics
Dr. James Council, Associate Dean
Dr. James Coykendall, Chair, Department of Mathematics
Dr. Angela Hodge, Chair, Department of Mathematics Assessment Committee
Dr. Davis Cope, member, Department of Mathematics Assessment Committee
Dr. Kenneth Magel, representative from the College of Science and Mathematics to the University Assessment Committee
Overview:

Assessment Report for the 2007 - 2008 Academic Year from the Department of Mathematics

Date that this review was completed: August 6, 2009

Strengths of the report included, but were not limited to:

- A new assessment plan has been implemented and steps have been outlined to enhance the plan to become comprehensive and inclusive.

- Data collected from the Spring 2008 semester were stronger than information provided in previous reports. The efforts of the department’s Assessment Committee and the participating faculty are sincerely appreciated!

- Reflective statements by participating faculty demonstrate that the data collected have been interpreted with objectives of making changes to enhance student learning in the future. The nature of the reflective comments was impressive and it could be constructive to develop a vehicle for communicating concern for students to programs served - and to their students.

- The members of the department’s Assessment Committee have developed an approach that will continue to provide in-depth information that will be beneficial to individual faculty and to the department as a whole.

- The approach, focus, depth of information, and tone of the report were positive. The next report will be eagerly awaited to learn of developments and progress that have been achieved. (Translation: Keep up the good work!)

Opportunities for future consideration could include:

- The application of additional direct measures of student learning would enhance opportunities of the faculty to increase student learning. Adding formative assessment tools as part of the mix of direct measures would also enhance the amount of information that can be gained. Beneficiaries of the additional information would be faculty as well as students.
Figure 1. Plot of assessment report evaluations for the Department of Mathematics versus the campus average and the average of the top 25% of reports for the academic years from 1998 - 1999 to 2007 - 2008.

Evaluation Score:

![Graph showing evaluation scores over academic years from 1998-99 to 2007-08 for Top 25%, Campus Average, and MATH categories.]

**Academic Year**

**Comments:** Evaluation scores for the 2007 - 2008 academic year (Campus Average and Top 25%) remain in development. To provide a frame of reference, previous values have been carried forward. Those values may be expected to show a slight change when the final data become available.