

Because the Office of Undergraduate Studies is now requiring program assessment reports that are similar to CTL program assessment reports; The Office of Research, Evaluation, and Assessment (OREA) has identified where a response may satisfy both reports. In the future, the University Assessment Committee is committed to redesigning a format that will eliminate the need for two reports. In the meantime, the CTL report requires a bit more data in order to comply with the 2008 NCATE Standard 2: Assessment System and Unit Evaluation.

“The unit has an assessment system that collects and analyzes data on applicant qualifications, candidate and graduate performance, and unit operations to evaluate and improve the performance of candidates, the unit, and its programs.” (NCATE 2008 Standards, p.25-27).

The CTL assessment system is comprehensively designed to be purposely redundant in the measurement of standards, flexible enough to meet specific program requirements, and robust enough to provide unit wide analyses for the purpose of improving unit operations. Multiple assessment data are collected and aggregated both at the program level and the unit level for initial, advanced, and other school professionals preparations using CTL, University, state, and national standards as the criteria for measurement.

This report contains embedded prompts guided by NCATE compliance standards. Program coordinators are asked to share these summaries with program faculty to facilitate discussions. The culminating synthesis of those conversations (interpretations and conclusions of the data summaries) should be written in the spaces provided in this report. The primary purpose of the report is to demonstrate how the CTL uses data to update (improve) programs and unit operations, as well as the assessment system.

Masters of Arts for Teachers: Mathematics

Briefly describe the CTL/program's conceptual framework and how it guided the design of your program's assessment process? In other words and similar to the University's Request, "note how the outcomes are linked to department, college, and university mission and goals." Be sure to reference how the faculty and professional community in your program were involved in development, implementation, and ongoing evaluation of the measures and processes used.

(This response should satisfy the CWU Assessment of Student Learning Report #1)

Goals and outcomes for the Masters of Arts for Teachers: Mathematics are tied to College and University Goals as described in the Assessment Plan on file in the Office of the Vice President of Undergraduate Studies. These goals and outcomes have developed over time by the faculty of the program in consultation with active K-12 teachers in the field as well as supporting members of the K-12 community. Much of this discussion occurs informally through collaborations with the K-12 community on grants designed to improve K-12 teaching of mathematics. The goals and outcomes of the program are also guided by national standards organizations, such as the National Council of Teachers of Mathematics, who develops national standards for K-12 teaching programs in mathematics. Goals and outcomes are examined along with student achievement toward meeting these goals on an annual basis through annual assessment reports.

Masters of Arts for Teachers: Mathematics

Please describe your program's assessment protocols. The following are to be used as guiding questions:

- 1) Is the system course based, end of program based, or other?
- 2) What measures are used and when are they administered?
- 3) How does the program eliminate bias and test for measurement fairness, accuracy, and consistency?
- 4) What technologies are employed to compile, aggregate, summarize, and report the data?
- 5) How is the program assessment process administered (all program faculty or a designee)?
- 6) How often do faculty meet to examine data?
- 7) How are data shared with candidates to help them reflect and improve?
- 8) How does the process maintain a record of formal complaints and subsequent resolutions?
- 9) How are these records taken into consideration during discussions of program improvement?

(This response will satisfy CWU Assessment of Student Learning Report # 2 and #3)

Assessment occurs at various levels of the program. Some assessment is included in course materials submitted by students through their three summers in the program; however, the final project or thesis required for graduation (usually completed and defended in the student's third year) is a significant component of this process. Materials are collected throughout the summer, with individual instructors taking responsibility for assessment of student performance in coursework. Because of the wide number of instructors involved in the student's coursework, a multifaceted perspective of student performance can be developed. Assessment of the student's final project or thesis is done by a committee of at least three graduate faculty, at times, external review of projects and theses is necessary to comply with Graduate School guidelines. Data about student performance is collected by the Program Director. The Program Director examines the data and discusses it with other primary instructors in the program annually before deciding if changes need to be made to the program. Students receive feedback both in the courses they take as well as receiving feedback through their graduate defense that includes a discussion of the student's experiences with the program. Students who feel that they were unfairly treated can register complaints with the Program Director, the Department Chair, the Associate Dean of the College of the Sciences or the Office of Student Affairs and Enrollment Management. Complaints are taken seriously and files regarding student complaints are retained in the Chair's Office.

Masters of Arts for Teachers: Mathematics

This section is for all advanced candidates. Please summarize how well the candidates of your program are meeting the program's Content Standards. For the advanced teacher preparation programs, summarize candidate achievement of Content Knowledge. For other school professionals programs (administrator, school counseling, and school psychology) summarize candidate achievement of standards which relate to Knowledge and Skills. Conclude by stating the improvements made or plans to improve the program, which have helped or will help candidates achieve higher levels of Content Knowledge performance.

(CWU Assessment of Student Learning Report #3)

Program Interpretations and Conclusions:

Based on coursework, students are meeting the content standards of the program. Students who complete the program have demonstrated their knowledge of those topics that underpin the material that they will be teaching in the K-12 educational system (Analysis, Abstract and Linear Algebra, Probability, and Geometry) as well as a breadth of understanding in topics that can be used to extend the experiences of K-12 students through special topics courses in topics such as Combinatorics, Game Theory, Voting Theory, and Dynamical Systems). Students are also expected to develop an understanding of basic educational research and this background is typically demonstrated by the completion of a final project or thesis that typically focuses on the development of a research question, collection of data, and an analysis of results. Past assessment reports have indicated that coursework designed to prepare students for this project or thesis have often failed to provide any material that could be used in the final project or thesis. In order to better develop student understanding of this process, in Summer 2008, the Department of Mathematics introduced two new courses (MATH 526: Research Design in Mathematics Education and MATH 527: Advanced Statistical Analysis). These courses are specifically designed to help students develop and implement educational research. These courses are required of all students, including those few who opt to do a more mathematical project as their final project or thesis.

Masters of Arts for Teachers: Mathematics

This section is only for advanced teacher preparation programs. Please summarize how well the candidates of your program are meeting standards associated with Pedagogical Content Knowledge and Skills. Note: only those standards that integrate content and content specific pedagogy should be cited here. This section relates to the interaction of the subject matter and effective teaching strategies that help students learn the subject matter. It requires a thorough understanding of the content to teach it in multiple ways, drawing on the cultural backgrounds and prior knowledge and experiences of students. For further description read the target level of 1b. on page 17 of the NCATE 2008 Standards. Conclude by stating the improvements made or plans to improve the program, which have helped or will help candidates achieve higher levels of Pedagogical Content Knowledge and Skills performance.

(CWU Assessment of Student Learning Report #3)

Program Interpretations and Conclusions:

Since the only audiences for these courses are students enrolled in the Master of Arts for Teachers, pedagogical considerations are a part of every course in the MAT program. In addition to the introduction of pedagogy into all content courses, the program also has four courses that focus directly on pedagogy as it relates to teaching of mathematics that are described below.

This section is only for advanced teacher preparation programs. Please summarize how well the candidates of your program are meeting standards associated with Professional and Pedagogical Knowledge and Skills. This section relates to those program standards associated with historical, economic, sociological, philosophical, and psychological understandings of schooling and education. It also includes knowledge about learning, diversity, technology, professional ethics, legal and policy issues, pedagogy, and the roles and responsibilities of the profession of teaching. For a description read the target level of 1c. on page 18 of the NCATE 2008 Standards. Conclude by stating the improvements made or plans to improve the program, which have helped or will help candidates achieve higher levels of Professional and Pedagogical Knowledge and Skills performance.

(CWU Assessment of Student Learning Report #3)

Program Interpretations and Conclusions:

Students are required to complete courses in methods aimed at both middle school and high school, and a specific course addresses the use of technology in the mathematics classroom. The courses are likely to be adjusted in order to comply with new assessment requirements; however, the basic content of the courses will remain unchanged. Since admission to the program requires the applicant to be a practicing teacher, the students bring into the course a wide variety of experiences. Much of our student body is currently involved with teaching in school districts that have a significant population of minority students or students from low-socioeconomic backgrounds. Many of the final projects and theses directly address these issues as they attempt to develop and assess alternative teaching strategies that may better suit particular populations in the student's home school district.

Masters of Arts for Teachers: Mathematics

This section is only for advanced teacher preparation programs. Please summarize how well the candidates of your program are meeting standards associated with Student Learning. These data demonstrate the effects candidates have had on the students they teach. For a full description read the target level of 1d. on page 19 of the NCATE 2008 Standards. Conclude by stating the improvements made or plans to improve the program, which have helped or will help candidates achieve higher levels of Student Learning performance.

(CWU Assessment of Student Learning Report #3)

Program Interpretations and Conclusions:

We do not do extensive post-graduation data collection. However, the graduate students are active teachers as they complete the Masters program (teaching during the academic year while attending during the summer). Through surveys of teachers, we have found that the MAT program does result in changes in teaching styles of the students enrolled in the course. This was particularly true of graduate's responses about informed assessment of student work.

Masters of Arts for Teachers: Mathematics

This section is only for other school professional programs. Please summarize how well the candidates of your program are meeting standards associated with Student Learning. These data demonstrate how well candidates are prepared to critique and reflect on their work within the context of student learning. How well are candidates prepared to establish environments that support student learning, collect and analyze data related to student learning, and apply strategies for improving student learning within their own jobs and schools. Conclude by stating the improvements made or plans to improve the program, which have helped or will help candidates achieve higher levels of Student Learning performance.

(CWU Assessment of Student Learning Report #3)

Program Interpretations and Conclusions:

N/A

Masters of Arts for Teachers: Mathematics

This section is for all advanced programs. Please summarize how well the candidates of your program are meeting the program's Dispositional standards. Candidates are expected to work with students, families, colleagues, and communities in ways that reflect the professional dispositions expected of professional educators. For a full description read the target level of 1g. on page 20 of the NCATE 2008 Standards. Conclude by stating the improvements made or plans to improve the program, which have helped or will help candidates achieve higher levels of achieving dispositional skills of a professional educator.

(CWU Assessment of Student Learning Report #3 example 3)

Program Interpretations and Conclusions:

Students responded to a dispositional survey in Summer 2007 that showed they felt responsive to the goals as described by the program. One low response was in regard to leadership roles. The program is working on ways to promote leadership qualities among the graduates.

Masters of Arts for Teachers: Mathematics

All programs, please describe what measures are used to specifically provide data on candidate's abilities to help students from diverse populations learn? What do the results of these measures reveal? To help you answer this question, please show data relative to how well candidates perform on the following elements:

- 1) Candidates' understanding of diversity, including ELL and students with exceptionalities
- 2) Candidates' abilities to develop and teach lessons that incorporate diversity
- 3) Candidates' demonstration of sensitivity to cultural & gender differences
- 4) Candidates' abilities to incorporate multiple perspectives in instruction
- 5) Candidates' abilities to develop classroom/school climates that value diversity
- 6) Candidates' understanding of teaching and learning styles and adaptation of instruction
- 7) Candidates' disposition valuing in particular fairness and learning by all

Please refer to the additional attachment, 2004-05_through_2006-07_Garduate_Diversity_Survey_Report.pdf for survey of graduates results.

In summary, have the analyses and summaries of these data provided any evidence that the program needs to make adjustments in the preparation of candidates?

Program Interpretations and Conclusions:

As stated previously, students in the program are practicing teachers who come from a variety of school districts, many of which have highly diverse populations. Their final projects typically describe research focusing on populations that have historically underachieved in science, technology, engineering, and mathematics fields. Given the importance of this topic, the program is planning on implementing a more formalized collection of data starting in Summer 2008.

Masters of Arts for Teachers: Mathematics

Please fill in the table below:

	2005	2006	2007	2008	2009
Applicants		0	1	1	
Admits		9	7	8	7
Completers		7	2		
Non-completers		2	1		

What program interpretations and conclusions can be made about the above data? What efforts are planned to increase applicants? retain candidates? and increase completion rates?

Program Interpretations and Conclusions:

I do not have the 2005 data, however, no significant changes in program size have been noted over the past few years, so the 2005 data is probably in line with the later numbers. The 2006 data shows that 77% of applicants graduated in 3 years. The 2007 data indicates that 2 graduates completed the program early while 1 has discontinued. The remaining 4 students plan to defend this summer (2009). In 2008, we admitted 8 students and in 2009, we admitted 7 more students and at this point none of these students has officially withdrawn from the program. These students will graduate in 2010 and 2011. We feel comfortable with our completion rate. There is some discussion about increasing our applicant pool by advertising or by extending the program to the Lynnwood campus of CWU.

Masters of Arts for Teachers: Mathematics

Please discuss the results of post-graduate employer satisfaction with candidates of your program. How were the data collected? Has the program considered preparation changes as a result of knowing how employers rated the graduates of the program? Were these results discussed with current candidates, all faculty, and PEAB members?

(CWU Assessment of Student Learning Report # 3)

Program Interpretations and Conclusions:

We have no direct data concerning employer satisfaction. However, many of the faculty members at CWU continue to work with MAT graduates and their employers in collaborative K-12/Higher Education ventures to improve mathematics teaching. At these meetings, CWU MAT students and graduates are generally spoken of in positive terms. This is also reflected in these employers willingness to continue to allow CWU MAT students to conduct educational research within their schools.

Masters of Arts for Teachers: Mathematics

Please discuss the results of post-graduate candidate satisfaction with how well the program prepared them for their current positions. How were the data collected? Has the program considered preparation changes as a result of knowing how well candidates rated their program satisfaction? Were these results discussed with current candidates, all faculty, and PEAB members? Please provide a table of placement rates for your candidates.

(CWU Assessment of Student Learning Report # 3)

Program Interpretations and Conclusions:

CWU MAT graduates continue to work with CWU faculty on a number of K-12/Higher Education collaborative projects. During this time, students typically indicate satisfaction with the program. These students are also our primary source of advertising the program. The sustained level of applicants over the past few years indicates that these students are effective at recruiting new students. It is assumed that this would not be the case if the students were dissatisfied with the program.

Masters of Arts for Teachers: Mathematics

Please discuss ways in which the program is planning to improve the program assessment process. What did the program do in response to last year's assessment information? Please reference data when you answer this question.

(CWU Assessment of Student Learning Report #4 and #5)

Program Interpretations and Conclusions:

Based on last year's assessment data, the program has created two new courses (one on Educational Research Design and a second on Advanced Statistical Analysis) in order to better prepare students for action research. It has also discussed ways to increase the discussion of diversity in its pedagogy courses. The new courses were first implemented in last year's program and are being adjusted as we collect student feedback. The diversity component is currently being discussed and should be implemented in this year's pedagogy course.