College of Education and Affiliated Programs
Biennial Assessment Report – Fall 2014
Math Education

Note: this report presents and analyzes data from Summer 2012 through Spring 2014.

Background

1. **Describe your program (enrollment, number of faculty, general goals). Have there been any major changes since your last report?**

   The Mathematics Education Program Goals and Mission:

   The Master of Arts Degree in Education, Option in Mathematics Education program (EDME program) is a program especially designed for teachers who wish to sharpen their teaching ability in mathematics and to learn effective teaching strategies that are evidence- and research-based, practical and immediately applicable to the classroom. The mission of this program is to provide candidates with the fundamental knowledge and skills of mathematics teaching and prepares socially responsible mathematics teacher leaders for a rapidly changing, technologically rich world. It engages candidates in research, scholarly activity, and ongoing evaluation. Finally, it helps candidates understand the value of diversity as related to the National and State Mathematics Standards and prepares them for a diverse world in which they will serve and collaborate with educators and their communities. The focus of the EDME program is to equip candidates with pedagogical content knowledge that includes knowledge of mathematics curriculum, instruction, and assessment centered on knowing and promoting student mathematical thinking through modeling in mathematical representation and mathematical language.

   Alignment between EDME Courses and National and State Standards

   The EDME courses in this 30-33 unit program were developed to address the *NCTM* [National Council of Teachers of Mathematics] *Principles and Standards* (2000) and the *Mathematics Framework for California Public School* (2005). They are also aligned with the recently released *Common Core State Standards* (2010) for mathematical practice that calls for classroom teachers to prepare mathematically proficient students who make sense of problems and persevere in solving them, reason abstractly and quantitatively, construct viable arguments and critique the reasoning of others, model with mathematics, use appropriate tools strategically, attend to precision, look for and make use of structure, and look for and express regularity in repeated reasoning.

   Table 1 (below) shows the student learning outcomes (SLOs) in the EDME program, as well as the alignment of these outcomes with relevant standards. There are seven student learning outcomes from seven courses: EDME 500 (SLO1), EDME 501 (SLO 2), EDME 504 (SLO3), EDME 505 (SLO4), EDME 520 (SLO5), EDME 502 (SLO6), and EDME 695 (SLO7). Table 2 highlights the seven program

student learning outcomes and the description of the signature assignments that measure those learning outcomes for cohorts 2011-2013 and 2012-2014 in the Academic Year of 2012-2014.

The Students in the EDME Program

The program recruits diverse candidates who have mathematics classroom teaching experiences and seek to enhance their knowledge and skills in mathematics content and pedagogy for leadership roles in mathematics education. The focus on connecting research to teaching practices and pursuing in-depth study of effective mathematics instruction in this program helps our graduates develop expertise as effective mathematics teachers and mathematics teacher-leaders.

The program had 54 applications in 2012-14, admitted 42, and had 36 of those matriculated (Table 3). In in the Academic Year of 2012-2013, for students in the cohort 2011-2013, 12 registered to take the comprehensive exam; in the Academic Year of 2013-2014, for students in the cohort 2012-2014, 12 registered to take the comprehensive exam (Table 4). The program also graduated 10 students in 2012-13 and 14 students in 2012-2014 (Table 6).

The Faculty in the EDME Program

Currently there are two tenure track faculty members and three additional part-time faculty members who teach in the EDME program. Among the two tenure track faculty members, one is full professor, and one is associate professor. The faculty members who teach in the EDME Mathematics Education Graduate Program are: Dr. Shuhua An from the Teacher Education Department, and Dr. Babette Benken from the Mathematics & Statistics Department (See Table 7).

There are also three part-time faculty members who have high level of expertise in mathematics content, mathematics instruction, teacher education, and research in mathematics education. The well-qualified part-time faculty members are a backup of the regular faculty in the EDME Program.

Table 1

Program Student Learning Outcomes and Relevant Standards

	Outcome 1	Outcome 2	Outcome 3	Outcome 4	Outcome 5	Outcome 6	Outcome 7
SLOs	Describe contemporary issues in mathematics education addressed in NCTM and California principles and standards.	Design various assessments, interpret, and use assessment results for planning and teaching mathematics.	Apply research-based instructional strategies in teaching.	Integrate contemporary technologies in mathematics planning, teaching, and assessment at the K-8 level.	Integrate pre-algebra and algebra content and pedagogy in K-8 classrooms.	Design research in their own teaching settings relating to mathematics education.	Collect, analyze and interpret data related to research questions.
Signature Assignments	Literature Review	Action Research	Lesson Study	Technology Integration	Case Study on Student Math Thinking	Research Proposal	Research Report
Conceptual Framework	Leadership; Scholarship; Advocacy	Effective Pedagogy; Evidence-based Practices	Effective Pedagogy; Collaboration; Leadership	Effective Pedagogy; Innovation	Evidence-based Practices	Scholarship	Evidence-based Practices; Scholarship; Advocacy
CSULB Learning Outcomes	Engaged in global and local issues; Integrating liberal education	Well-prepared; Knowledge and respect for diversity	Well-prepared; Collaborative problem solving	Collaborative problem solving	Knowledge and respect for diversity	Well-prepared; Engaged in global and local issues	Engaged in global and local issues
NCATE	1c. Professional knowledge and skills 1g. Professional dispositions	1b. Pedagogical content knowledge 1d. Student learning	1a. Content knowledge 1b. Pedagogical content knowledge	1a. Content knowledge 1b. Pedagogical content knowledge 1d. Student learning	1b. Pedagogical content knowledge 1c. Professional knowledge and skills	1c. Professional knowledge and skills 1d. Student learning 1g. Professional dispositions	1c. Professional knowledge and skills 1d. Student learning 1g. Professional dispositions

Table 2

Description of Program Student Learning Outcomes and Signature Assignments

SLO	SLO Description	Signature Assignment(s)	Description of the Assignment	Cohort Group
1	Describe contemporary issues in mathematics education addressed in NCTM and California principles and standards.	EDME 500 Fall 2012 Summer 2014	Candidates write a literature review in mathematics education. The purpose of the literature review is to understand contemporary issues in mathematics education addressed in NCTM and California principles and standards.	2012-2014 2014-2015 (spring admission)
2	Design various assessments, interpret, and use assessment results for planning and teaching mathematics	EDME 501 Spring2013 Spring2014	Candidates will work on an action research project that engages them in the inquiry process of developing assessment instrument, collecting, analyzing and interpreting student assessment data. The purpose of this action research is to help candidates learn and demonstrate their understanding of how summative assessment influences their classroom instruction.	2012-2014 2014-2015 (spring admission)
3	Apply research-based instructional strategies in teaching.	EDME 504 Fall 2012 Spring 2013	Candidates will develop a math lesson study in the area of algebra with their grade level peers. The purpose of this lesson study is to plan standards-based mathematics instruction using different models and identify effective teaching approaches in mathematics instruction from collaborating with their colleagues.	2011-2013 2012-2014
4	Integrate contemporary technologies in mathematics planning, teaching, and assessment at the K-8 level.	EDME 505 Spring2013 Spring2014	Candidates design a math lesson plan using web quest. They address objectives, standards, materials, motivation ideas, teaching and learning strategies, procedures of the activity, exampled of it, and the evaluation approach	2011-2013 2012-2014 2014-2015 (spring admission)
5	Integrate pre-algebra and algebra content and pedagogy in K-8 classrooms.	EDME 520 Summer 2012 Summer 2013 Summer 2014	Candidates design probing questions to assess and develop students' algebra thinking. The purposes of this case study are to understand challenges in children's algebra learning and to develop developmentally appropriate probing questions in an algebra lesson to support struggling students.	2011-2013 2012-2014 2014-2015 (spring admission)
6	Design research in their own teaching settings relating to mathematics education.	EDME 502 Fall 2013	Candidates develop a research proposal in their own teaching settings relating to mathematics education. The purpose of this research proposal is to apply knowledge and skills of research to design a research plan directly relating to mathematics teaching or learning.	2012-2014
7	Collect, analyze and interpret data related to research questions.	EDME 695 Spring 2013 Spring 2014	Based on the research proposals in mathematics education, candidates collect, analyze, and interpret data related to research questions, and write the final research report in the chapter form. The purpose of this final report is to apply knowledge and skills of research to analyze, interpret, and discuss the findings from data collected in teaching practice	2011-2013 2012-2014

Table 3

Program Specific Candidate Information, 2012-2014 – Transition Point 1 (Admission to Program)

	2012-2013			2013-2014		
	Applied	**Accepted**	**Matriculated**	**Applied**	**Accepted**	**Matriculated**
Total:	28	28	23	26	13	13

Table 4

Program Specific Candidate Information, 2012-2014 – Transition Point 2 (Advancement to Culminating Experience)

	2012-2013	2013-2014
Thesis (698)[1]	1	4
Comps[2]	12	12

Table 5

Comprehensive Exam Results, 2012-2014

	2012-2013	2013-2014
Passed	11	12
Failed	0	12
Total[3]	11	12

[1] This is data on all stude**n**ts who were enrolled in thesis work from Summer 2012 to Spring 2014. This figure may include students who actually "crossed into" this transition point prior to Fall 2012 and were still making progress on their theses at this time.

[2] This is data on the number of students who *applied* to take the comprehensive examination from Summer 2012 to Spring 2014. The data include students who may not have taken or passed the examination(s).

[3] The number of pass + fail does not equal the number of students who advanced to take the comps (Table 3) because some students who have registered for the exam do not attempt it. This data reflects number of attempts at one or more parts of the comprehensive exam from Summer 2012 to Spring 2014. Individuals who failed all or part of the exam and chose to retake it during AY 12-13 may be accounted for twice.

Table 6

Program Specific Candidate Information, 2012-2014 – Transition Point 3 (Exit)

	2012-2013	2013-2014
Degree	10	14

Table 7

Faculty Profile 2012-2014[4]

Status	2012-2013	2013-2014
Full-time TT/Lecturer	3	2
Part-time Lecturer	1	2
Total:	3	3

2. How many of the total full- and part-time faculty in the program reviewed and discussed the assessment findings described in this document? Please attach minutes and/or completed worksheets/artifacts to document this meeting.

In fall 2014, one full-time faculty member and two part-time faculty members who taught EDME courses participated in the data discussion meetings. They reviewed and discussed the assessment findings and related documents (SLO data, Results of Exit Survey, SLO rubrics, Program survey, and course syllabi. Discussion notes from this meeting are imbedded throughout this report.

[4] Faculty numbers reflect headcounts of any faculty member teaching a course in the program for the prior academic year (summer through spring). Faculty who teach across multiple programs will be counted in each program.

Data

3. Question 3 is in 2 parts focused on *primary* data sources related to: student learning and program effectiveness/student experience:

The Math Education program draws upon data from a variety of sources for its ongoing program improvement processes, and for this biennial report in particular. Data informing this report include:

- **Enrollment and Headcount Data:** Enrollment and headcount data are provided by the department office (faculty headcounts) and the Graduate Office. These data are reflected in Tables 3-7 above. The data are shared with the Assessment Office on an annual basis and reviewed in alternating years for the biennial report.

- **Signature Assignment Data:** Signature assignments are faculty-designed assessments, typically embedded in courses, that assess candidate learning on program-level outcomes. Assessment scoring is guided by rubrics to ensure consistency and fairness. These data are collected each time the relevant course is offered and are then forwarded to the Assessment Office for analysis. Analysis includes calculating the mean and standard deviation for overall and criteria scores. Signature assignments are outlined in Tables 1 and 2 (above). Data related to these assignments are reported in Appendix A.

- **Exit Survey for Advanced Programs:** Each spring, the Assessment Office administers a web-based survey to those who have completed their programs and/or filed for a credential the prior summer or fall, or anticipate doing so that spring. A discussion of the findings from the program Exit Survey is included in section 3b. Relevant survey data for the program are reported in Appendix B.

- **Alumni Survey for Advanced Programs:** Starting in fall 2013, the college administered a web-based survey of alumni of advanced programs. This survey is administered every 3 years. A discussion of the findings from the Alumni Survey is included in section 3b. Relevant survey data for the program are reported in Appendix B.

- **EDME Program Post-Survey:** The EDME program post-survey was administered to graduates of the 2011-13 and 2012-2014 cohorts . Results from the survey highlight respondents' overall satisfaction with the quality and effectiveness of the EDME program based on candidates' positive experiences with assignments or projects deemed valuable and/or helpful from each course in the program. Relevant survey data are reported in Appendix B.

Additional information, including each program's assessment plan and signature assignments, can be found at: http://www.ced.csulb.edu/assessment.

a. <u>Candidate Performance Data</u>: Provide *direct* evidence for the student learning outcomes assessed this year and describe how they were assessed (the tools, assignments, etc. used).

The figures below present an overview of SLO data for the period covered by this report. For more detailed data on specific SLOs and related criteria (as available) please go to Appendix A.

Figure 1

Figure 1 displays aggregate data by SLO for a two-year period based on points earned.

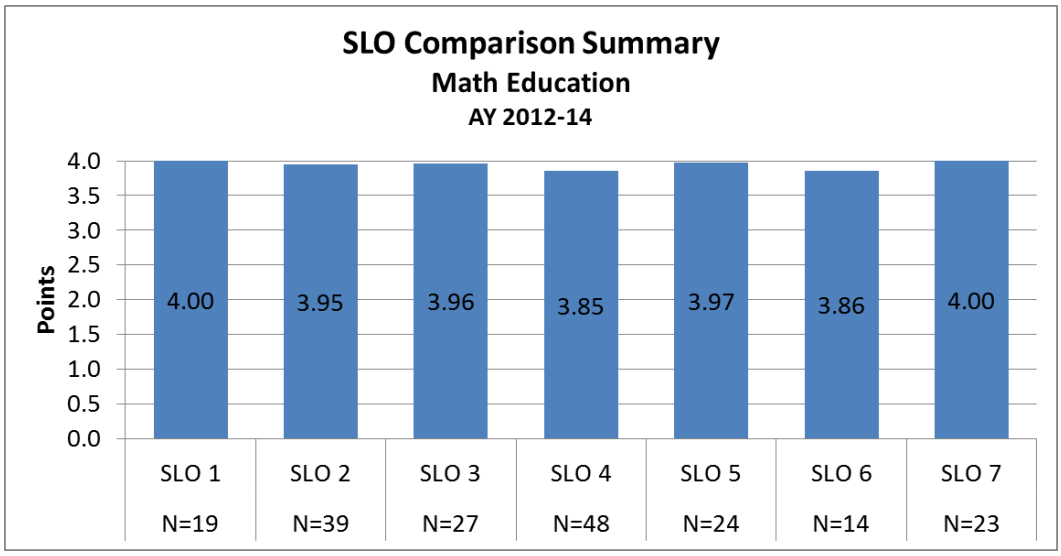
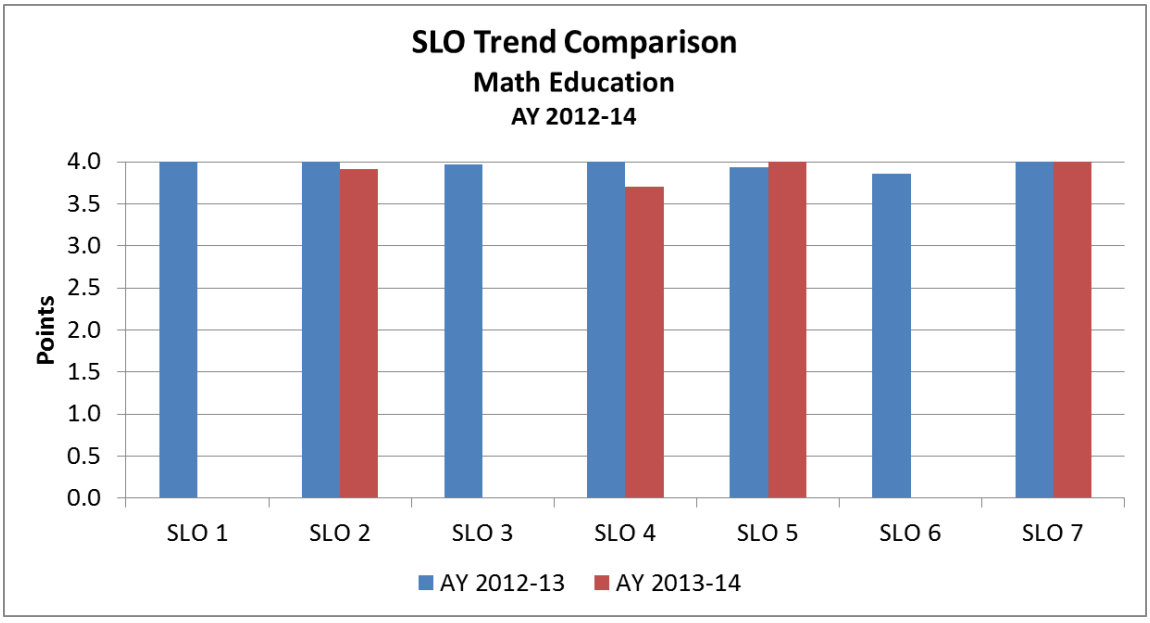


Figure 2

Figure 2 displays trends in SLO data across two years based on points earned.



b. <u>Program Effectiveness Data</u>: What data were collected to determine program effectiveness and how (e.g., post-program surveys, employer feedback, focus groups, retention data)? This may be indirect evidence of student learning, satisfaction data, or other indicators or program effectiveness.

The Math Education program has reviewed and interpreted data from the following surveys (listed below). Specific response data for each of the survey items discussed in the following section can be found in Appendix B.

Survey	**Items**
Exit Survey, 2013 & 2014	Program Advisement; Technology; Importance of Beliefs; Program Contribution to Candidate Ability; Fieldwork/Clinical Practice; Opportunity for Participation; General Outcomes
Alumni Survey, 2013	General Outcomes; Career Preparation; Candidate Satisfaction
EDME Post-survey	Valuable Assignments and Projects

Table 8

Survey Response Rates, 2013-2014

Survey	Estimated # in Sample	# of Responses	Estimated Response Rate
Exit Survey 2013	11	9	81.82%
Exit Survey 2014	15	12	80.00%
Success Survey 2013	22	5	22.73%
Alumni Survey Fall 2013	44	9	20.45

<u>Exit Survey for Advanced Programs</u>

In spring 2013 and 2014 a general Exit Survey by the College of Education was distributed to candidates in the last semester of the program coursework for the cohorts 2011-2013 and 2012-2014. A total of nine candidates responded to the survey in spring 2013 and 12 candidates in spring 2014, representing about 82 % of all students in the cohort 2011-2013 and 80% pf all students in the cohort 2012-2014 mathematics Education Programs. The following is a discussion of key findings based on candidates' responses to specific survey items:

Program Advisement

The results from the Exit Survey show that the increased rating in almost all categories in the program advisement except items 1 and 3 in question 5, compared to the results of the 2012 and 2013 surveys. For example, the mean score of candidates' rating their **level of general satisfaction with** "the accuracy and thoroughness of the information provided on the program web site" was increased 0.19 points in the 2013 survey compared it to the 2012 survey. The mean score of rating on "My advisor's knowledge of my program requirements" was increased 0.17 points between 2012 and 2013 program survey. In comparing the results between 2013 and 2014 surveys, all mean

scores of rating on the program advisement items were increased in the 2014 survey.

In general, candidates felt satisfied with program advisement from faculty and the advisor's knowledge of the program requirements. In the 2013 survey, 100 % of sampled candidates agreed with the following statements: "the ongoing advisement and program information I have received from my faculty/program advisor," "My advisor's knowledge of my program requirements," and "My advisor's availability to meet at times that are convenient for me." An increased trend in rating on all items is shown in the 2014 survey.

Technology Integration

In the 2013 survey, candidates indicated higher level of satisfaction with instructors' use of technology and media to effectively promote learning in instruction (75%) and instructors' expectation for candidates to use instructional technology and media in completing course assignments (83.3%) compared to the previous report (78%). Especially, there was about 6% increase on the item in which candidates highly recognized that they had sufficient opportunities to learn about using computer technology to enhance their academic and professional work (83.3%) compared to the previous report (78%).

Specifically, more than 88% of candidates strongly agreed or agreed on their use of technology such as: they are able to locate online resources in their field; they use technology ethically and responsibly (accessibility, fair use, security, safety, etc.); they are able to evaluate the reliability and quality of online resources (100%); and that their academic and professional work is enhanced by the use of technology. In the 2013 Survey, they also indicated that they were able to use technology to transform the teaching and learning process (75%). In the 2014 survey, about 92% candidates strongly agreed or agreed to the above statements, with 100 % strongly agreed or agreed with the statement, "I use technology ethically and responsibly (accessibility, fair use, security, safety, etc.)."

Importance of Beliefs

In the 2013 survey, in response to the question about the importance of their beliefs, 100% of sampled candidates agreed on the importance of acting as a leader to promote learning and success for all students; collaborating with colleagues and community organizations to support school/program improvement; engaging in an ongoing process of inquiry to support and improve their practice; and acting as an advocate both for those they serve and for themselves. In addition, a majority of candidates believed in the importance of using research- and evidence-based practices in their professional work, and the importance of reading, understanding, interpreting and applying high quality research in their professional work. In the 2014 survey, 100 % candidates strongly agreed or agreed on the importance of developing competence in working collaboratively within school, family, and/or community contexts; and accepting leadership roles in their profession in responsible and ethical ways. They also all strongly agreed or agreed on the importance of developing the content knowledge and skills needed to be successful in their profession, understanding how to collect and use assessment data to inform their practice, understanding how to use technology and other innovative processes in appropriate ways within their profession. In addition, they indicated that they understand and appreciate the role of research in their profession and use scholarship in a continuous learning and inquiry manner, and see it as part of their professional responsibility to advocate for the interests of their students/clients.

Program Contribution to Candidate Ability

In the 2013 survey, about 88% candidates agreed that the program contributed a great deal to their ability to use research- and evidence-based practices, read, understand, interpret and apply high

quality research in their professional work; 75% agreed that the program contributed a great deal to their ability to engage in an ongoing process of inquiry to support and improve their practice. In the 2014 survey, 92% candidates agreed that the program contributed a great deal to their ability to develop the content knowledge and skills needed to be successful in their profession; 83% of candidates agreed that the program contributed a great deal to their ability to understand how to collect and use assessment data to inform their practice, understand how to use technology and other innovative processes in appropriate ways within their profession, accept leadership roles in their profession in responsible and ethical ways, understand and appreciate the role of research in their profession and use scholarship in a continuous learning and inquiry manner, and see it as part of their professional responsibility to advocate for the interests of their students/clients; 75% candidates agreed the program contributed a great deal to their ability to develop competence in working collaboratively within school, family, and/or community contexts.

In the 2013 survey, a majority of candidates showed a high level of agreement with the course work that prepared them to reflect upon sensitivity to all aspects of diversity (75%) and facilitated their reflection on their professional values and dispositions (75%). The results of 2014 survey show more candidates with a high level of agreement to more areas in the survey: the course work prepared them to connect professional standards to the latest developments in the field and practice (83.3%) and the course work prepared them for the opportunity to work with other candidates from a wide range of diverse groups.

Fieldwork/Clinical Practice

In the 2013 survey, about 88% of students indicated that they had experience in fieldwork or clinical work in the program. In the 2014 survey, most candidates rated a high level of agreement regarding how well the fieldwork/clinical portion of the program did in the following areas: I interacted with diverse students/clients in my fieldwork/clinical experiences (83.3%); I was able to gain experience in a variety of settings through my fieldwork/clinical experiences (100%); I was encouraged to reflect on my content and professional knowledge through my fieldwork/clinical experiences (100%); I was encouraged to reflect on my professional dispositions through my fieldwork/clinical experiences (100%); my fieldwork/clinical experiences gave me the opportunity to synthesize and apply what I learned in my coursework (100%); my coursework prepared me well for my fieldwork/clinical experiences (100%); I had the opportunity to work collaboratively with others (faculty, supervisors, peers) to both receive and give feedback on practice during my fieldwork/clinical experiences (100%); and my fieldwork/clinical experiences helped me develop strategies for serving all students/clients to promote their learning and success (100%).

Opportunity for Participation in Activities

Candidates indicated their opportunities in participation in the following activities during the academic year 2013-2014: Participated in a meaningful and productive group discussion on an educational issue/topic (83.3%); participated in small or large group activities in class(83.3%); discussed ideas from readings or class with a faculty member outside of class (67%); Received prompt, detailed, and useful written or oral feedback from a professor about your academic performance (75%); and had serious conversations with students who are very different from you in terms of race, religious beliefs, political views, personal values, etc. (75%).

General Outcomes

In the 2013 survey, all candidates strongly agreed or agreed to all areas of general program outcomes, with 63% of the sampled candidates strongly agreed that the program facilitated the development of their critical thinking, and prepared them for professional practice. In the 2014

survey, about 92% of candidates strongly agreed or agreed to all areas of general program outcomes with 67% of candidates strongly agreed that their program prepared them to use technology and other innovative approaches to work collaboratively with others and to both receive and give feedback on practice during their coursework.

Advanced Programs Alumni Survey

The results from the 2013 Advanced Programs Alumni Survey highlight the positive impact of the program on candidates' professional development and preparation for success in their chosen field. The following responses illustrate the level of overall satisfaction graduates experience with the quality of the program as it relates to their professional development:

> I developed the content knowledge and skills needed to be successful in my profession (89%), I understand how to collect and use assessment data to inform my practice (100%), I developed competence in working collaboratively within school, family, and/or community contexts (89%), I can accept leadership roles in my profession in responsible and ethical ways (100%), I understand how to use technology and other innovative processes in appropriate ways within my profession (100%), I appreciate the role of research in my profession and use scholarship in a continuous learning and inquiry manner (89%), I see it as part of my professional responsibility to advocate f or the interests of my students/clients (100%).

About 67% of program alumni indicated that the program completely prepared them (or prepared them a great deal) for their career. About 90% of the candidates said that the educational experiences were worth the time and money invested in their educational program. Three alumni have continued their education either in the Educational Leadership Doctorate (Ed.D.) program at CSULB or in the Ph.D. program at UCR. More than 44% Alumni had the professional accomplishments in Leadership position in a professional association (22%) and Job promotion. About 89% of them attended a professional conference and more than 33% presented at a professional conference.

Overall, graduates indicate being very satisfied with the EDME program. In the 2013 Advanced Programs Alumni Survey administered by the College of Education, program alumni indicated: "I was very satisfied with the College of Education at CSULB, I learned a lot from my Master's in Math Education," "Drs. An, Wu, and Burnett did a great job, I liked the progression of classes and how the classes and assignments built toward our final paper," "Dr. Wu and Dr. An were very supportive during the two years of the program." In the 2014 exit survey, candidates stated: "I have gained invaluable information that I feel only came from being taught and influenced by my instructors here at CSULB from our program," "It covers common core, a new implementation nationwide," "It has given me a lot of information regarding the new Common Core State Standards." One student had very good suggestion "designing projects that involve students as well as working professionals to create mentoring and networking opportunities while working on degree."

4. <u>OPTIONAL</u>: You may provide *additional* information (e.g., other data, copies of letters of support from granting agencies or school staff, etc.) about candidate performance, the student experience or program effectiveness used to inform programmatic decision making. This may include quantitative and qualitative data sources.

EDME Program Post-Survey

The EDME program uses the "program post-survey" to assess the effectiveness of course assignments, instruction, and student learning. The program provided the post-survey to the 2011–2013 cohort in spring 2013 and to the 2012–2014 cohort in spring 2014. 12 candidates responded

to the survey administered in 2013 and 2014. The results of the parts II Assignments and Projects are reported in Appendix C (Supplemental Program Information).

"Math at the Beach" Program

A unique feature of the EDME program is to provide a range of support and opportunities to program candidates to grow professionally and scholarly with focusing on pedagogical content knowledge, leadership roles, community service learning, and global perspectives. Each spring semester, all candidates worked together to design and provide the annual professional development event, "Math at the Beach", to deliver workshops on the common core state standards for mathematics for CSULB pre-service teachers and local school teachers. Each year, a number of candidates also attend and present their research and lesson studies with program faculty members at state, national, and international conferences.

The Math at the Beach event affords program candidates the opportunity to take on a number of leadership roles as well as to actively engage in community service experiences. In spring 2013 *and 2014*, all candidates from two EDME cohorts 201*2*-201*3* and 201*2*-201*4* worked together and provided the "Math at the Beach: Diving Into the Common Core Standards" in 2013, and "Math at the Beach: The Common Core Mathematics Study" in 2014 with a series of workshops for more than 100 CSULB pre-service teachers and local school teachers. Their CCSS curriculum maps and unit lessons and investigation projects and math lesson studies provided excellent examples on how to implement CCSS standards in real classrooms. Their efforts on organizing and participation in this event enhanced their leadership ability and also provided them the excellent experience in community Service.

In spring 2013, two EDME cohorts of 2011-2013 and 2012-2014 provided the 2nd "*Math at the Beach: Diving into the Common Core Standards for Mathematical Practice*" event for CSULB pre-service teachers and local school teachers, focusing on how to implement the eight Common Core Math Practice Standards using detailed examples, activities, and video lessons from their classrooms. This event was well received and served more than 100 local school teachers and pre-service teachers. Dr. Joan Bissell, Director, Teacher Education and Public School Programs Office of the Chancellor California State University, attended this event. She had positive comments on the "Math at the Beach event" and asked us to provide her all candidates' CCSS power point presentations and their sample CCSS lessons and projects so that she can share these on the CSU system website and with the funders of the 100Kin10 Research Design Competition.

In spring 2014, two EDME cohorts of 2012-2014 and 2014-2015 provided the 3rd "*Math at the Beach: The Common Core Mathematics Study*" event for CSULB pre-service teachers and local school teachers, focusing on using their classroom teaching videos to demonstrate how to teach common core math lessons, and analyze effective teaching strategies in their math lessons. This event was well received and served more than 100 local school teachers and pre-service teachers. Participants had highly commented on this Math at the Beach event.

"East Meets West" Program

The goal of the East Meets West program is to make an international experience accessible to program graduates in the EDME program through integrating a graduate course EDME 550 *Global Perspectives in Mathematics Teaching* into a Summer Teacher Institute that provides a unique opportunity for our candidates to learn mathematics teaching and learning from international perspectives.

11 Math Ed graduate students in summer 2013 and 16 Math Ed graduate students in summer 2014 participated East Meets West program. They taught their group created CCSS math lessons to local school children at Whittier Elementary School, St. Cornelius School, and Poly High and sent their video lessons to Chinese colleagues for review during the day. In evening, they discussed their lessons with Chinese colleagues via Illuminate meetings. Math Ed professors from Taiwan, State Ranked math teachers, and regular math teachers from China provided invaluable feedback to students on their lessons.

We also engage students in the study abroad program. Five graduate students from the Math Ed program engaged various professional and scholarly activities in China in summer 2013 and 2014. They taught open lesson to Chinese students in English at the forum of 2014 US and China Math Education in Nanjing. Their lesson was highly praised by Chinese math teachers and university professors, compared to the open lessons provided by Chinese high ranking teachers at the state level in this forum. The TV Station in Nanjing broadcasted their lessons and interviews with them and their faculty. Elizabeth Martinez and Melissa Palmer provided algebra lessons to middle school students in Shanghai, and Melissa Palmer also provided linear model open lesson to Chinese high school students at the 2014 International Conference of Chinese Association of Mathematics Education in Lanzhou, China, observed by about 500 math educators and highly commended by them. In addition, all five graduates provided presentations on the analysis of middle school student Smarter Balanced Assessment results and engaged in the discussion on comparing Smarter Balanced Assessment results between their students and Chinese students who took the same tests at the Assessment Forum in Nanjing. More commendable, Elizabeth Martine and Melissa Palmer presented their research on algebra classroom teaching at the 2014 ICCAME Conference.

Overall, the East Meets West program has provided our graduate students the rich field work experiences on how to teach and learn math effectively with an international perspectives, especially broadened our students' views with regard to diverse ways of teaching math in different cultures and educational systems. The program has also further connected CSULB with international Educational communities.

Candidates' Scholarly Activity

Candidates in the EDME program have actively participated in local, national, and international conferences. For example, in summer 2013, five students from the cohort 2012-2014, attended and presented their math lesson studies at the 5th Classroom Teaching Research for All Students (CTRAS) in Fuzhou, China. In summer 2014, two graduates provided presented their math lesson study at the 2014 ICCAME Conference in Lanzhou.

Analysis and Actions

5. Please use the table below to report the major interpretations based on your review of the data for this reporting cycle. Consider signature assignment data on candidate performance *as well as* any survey and other data. Be sure to make note of how these new findings compare to *past* findings on the data and discuss *why* you believe the results have changed. (Note: While it is possible that you have both strengths and weaknesses for a single topic, it is also possible you might identify *only* strengths or *only* weakness for a topic.)

Table 9

Interpretations and Discussion of Program Strengths and/or Areas of Needed Improvement

#	Topic	Data Sources (i.e., Signature Assignments and/or surveys)	Strengths	Areas for Improvement (Please address action taken or planned in Q6 below)	Changes from past findings *and why*
1	Candidates' writing skills	EDME Post-survey		Candidate responses on the program post-survey suggest the need to develop and reinfornce candidates' abilities in writing.	N/A
2	Technology Integration (SLO 4)	Signature assignment data; Exit Survey, EDME Post-survey	Overall, student scores on the Technology Integration assignment are high (3.85 two-yr avg) as is the level of student satisfaction with the degree to which technology is integrated throughout the program (as reported in the Exit and Program surveys).	The slight decline in candidate scores between 2012-2013 and 2013-2014 (4.0 to 3.71, respectively), in addition to student input gathered from the program Exit Survey, suggests candidates would benefit from being exposed to more technology skills early on in the program that are practical and accessible by classroom math teachers.	N/A
3	Fieldwork /Clinical Practice	Exit Survey, EDME Post-survey	Candidates exiting the program report having very positive outcomes as a result of their fieldwork experiences. Specifically, candidates report high levels of satisfaction with the degree to which their fieldwork experience presented them opportunities to interact with diverse populations and professional settings, apply what was learned in the classroom, and collaborate constructively with others.		N/A

6. Please outline the steps the program will take (e.g., revise curriculum, programs, practices, assessment processes) to address areas in need of improvement outlined in Question 5.

Table 10

Program Action Items

Topic #	Action to Address Areas for Improvement	By Whom?	By When?	Update on Actions (If Applicable)
1	Provide candidates more individual meeting opportunities to support the development of writing skills. Specifically, additional support on how to write research proposals will be provided in EDME 500 and 502	Dr. Shuhua An	Fall 2015	N/A
2	EDME 505 (SLO 4) course will be at the beginning of the program so as to provide candidates earlier exposure to a variety of skills and strategies related to integrating technology into a math classroom.	Part-Time Faculty	Spring 2016	N/A

7. Will you be making any changes to signature assignments or rubrics as a result of your review of data for this report?

[X] Yes (see below)

❑ No (no further action is required)

Table 11

Proposed Changes to Program Documents

Course #	Signature Assignment Name	Nature of Changes (BRIEF)	Reasons for Changes (BRIEF)
EDME 504	Lesson Study	Have students do one video lesson analysis	Two video lessons are too much workload for students

Please remember to submit revised rubrics to the Assessment Office when they are completed to ensure we can help you collect the correct data.

APPENDIX A:

Candidate Performance Data

Math Ed
Signature Assignment Data Report
AY 2012-14

Figure Description:

- **SLO Comparison Summary Graph:** compares aggregate data by SLO for a two-year period based on points earned.
- **SLO Trend Comparison Graph:** displays trends in SLO data across two years based on points earned.
- **SLO Score Distribution Graph:** displays score distribution trends for SLOs across two years based on the percentage of students who earned a particular score
- **SLO Criteria Score Means Graph:** displays aggregate criteria data for SLOs for a two-year period based on the average percentage of points earned.

Student Learning Outcomes

Outcome 1: Describe contemporary issues in mathematics education addressed in NCTM and California principles and standards.

Outcome 2: Design various assessments, interpret, and use assessment results for planning and teaching mathematics.

Outcome 3: Apply research-based instructional strategies in teaching.

Outcome 4: Integrate contemporary technologies in mathematics planning, teaching, and assessment at the K-8 level.

Outcome 5: Integrate pre-algebra and algebra content and pedagogy in K-8 classrooms.

Outcome 6: Design research in their own teaching settings relating to mathematics education.

Outcome 7: Collect, analyze and interpret data related to research questions.

Figure 1

Figure 1 shows aggregate data by SLO for a two-year period based on points earned.

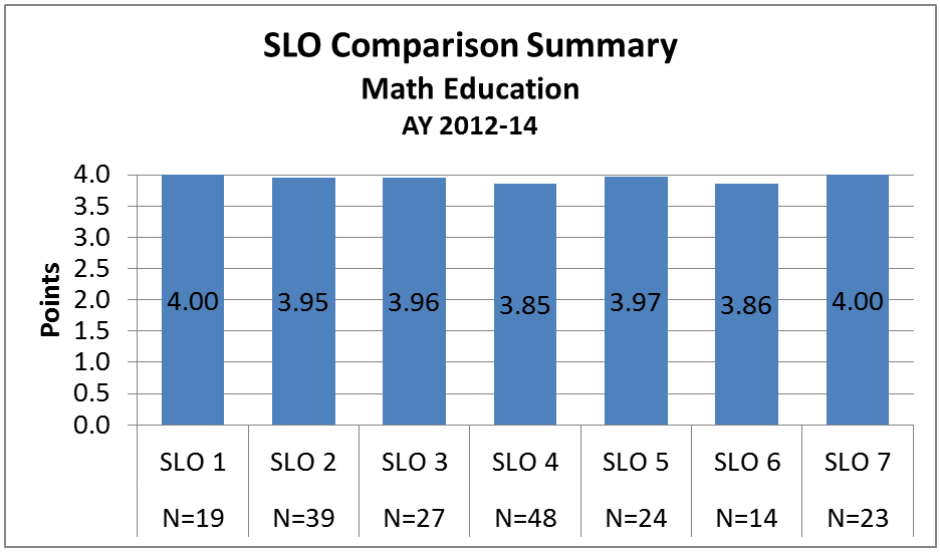


Figure 1 provides mean scores for each of the seven program SLOs. It shows SLO 2 and SLO7 have the highest mean scores at 4, followed by SLO 5, SLO 3, SLO 2, SLO 6, and SLO 4 that has the lowest mean score at 3.85.

Figure 2

Figure 2 shows trends in SLO data across two years based on points earned.

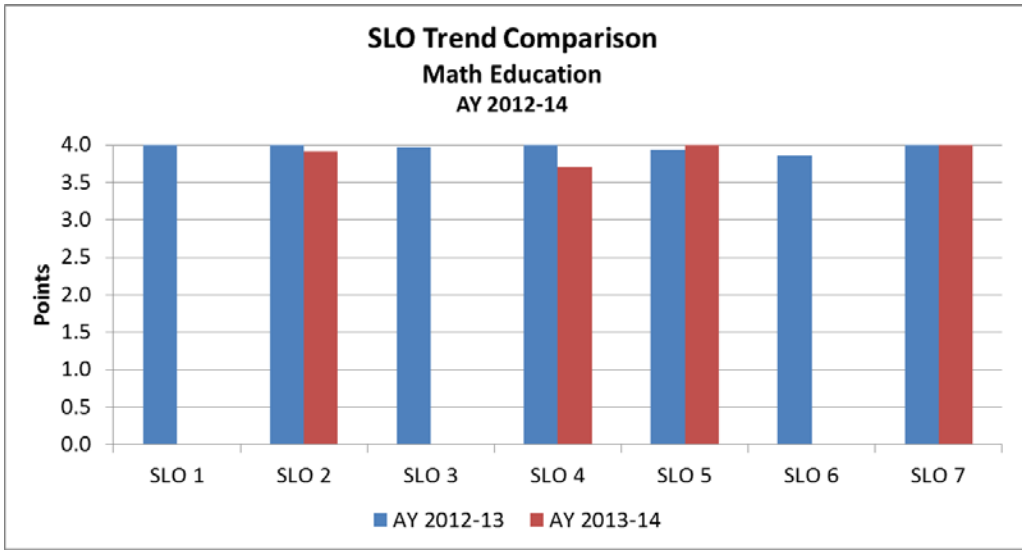


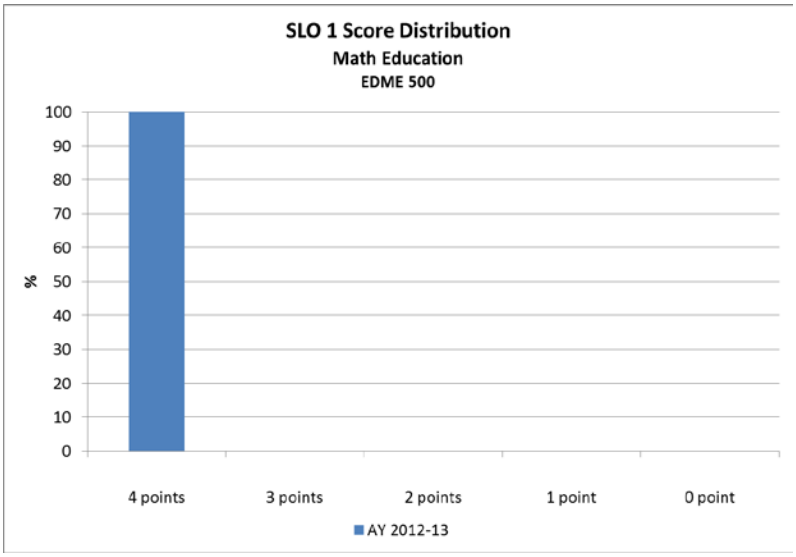
Figure 2 shows the trends in SLO data across two years based on points earned. The comparison of mean scores ranging from 0 to 4 points between two years from Figure 1 indicates that scores in SLO 5 were increased from year one to year 2, and scores in SLO 7 were maintained the highest 4-point in both years. The results in Figure 1 also show slight declines in in SLO 2 and SLO 4 mean scores from year one to year two.

The following Figures 3 to 8 show the percentage of mean scores ranging from 0 to 4 points for each program SLO.

Outcome 1: Describe contemporary issues in mathematics education addressed in NCTM and California principles and standards.

Figure 3

Figure 3 indicates that all 19 students scored at a 4 on describing contemporary issues in mathematics education addressed in NCTM and California principles and standards.

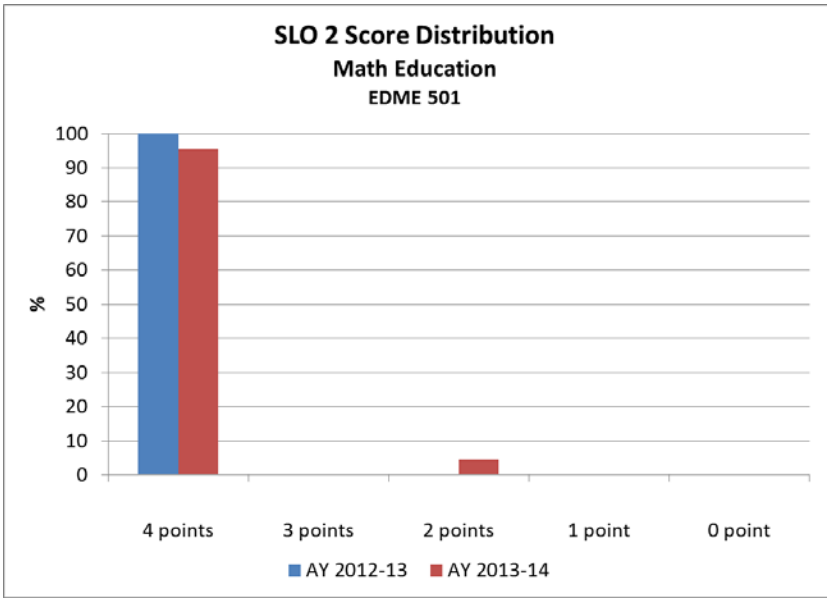


AY	N	Mean	SD
AY 2012-13	19	4.00	0.00

Outcome 2: Design various assessments, interpret, and use assessment results for planning and teaching mathematics.

Figure 4

Figure 4 below shows that a total of 17 students scored a 4 on deigning various assessments, interpreting, and using assessment results for planning and teaching mathematics. No student had the mean score below 4-point with SLOs 2 in the Academic Year 2012-2013. In the Academic Year 2012-2014, a total of 22 students scored a 3.91 with SD .42. The slightly decreased mean score in year 2 had a SD at 0.42 for SLO 2

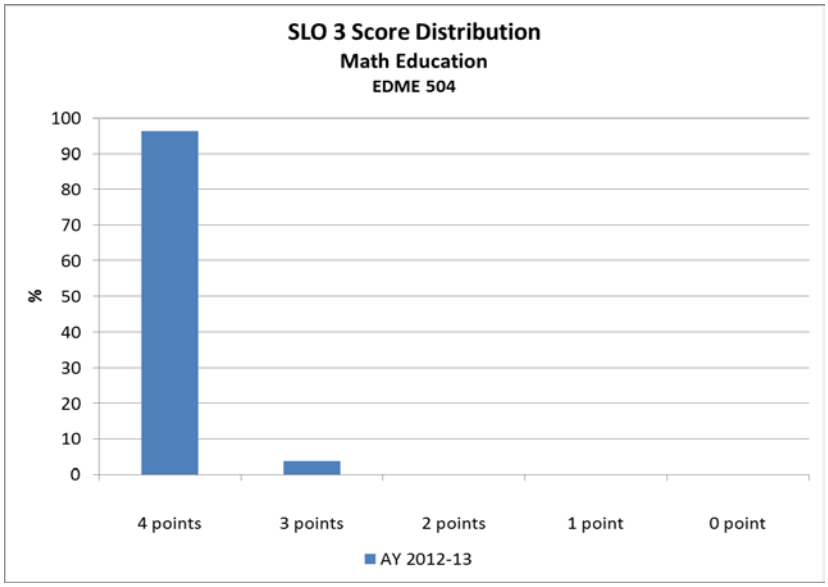


AY	N	Mean	SD
AY 2012-13	17	4.00	0.00
AY 2013-14	22	3.91	0.42

Outcome 3: Apply research-based instructional strategies in teaching.

Figure 5

Figure 5 below shows that more than 95% of students scored a 4 on applying research-based instructional strategies in teaching. Only less than 5% of student scored a 3, and no student had the mean score below 3-point with SLOs 3.

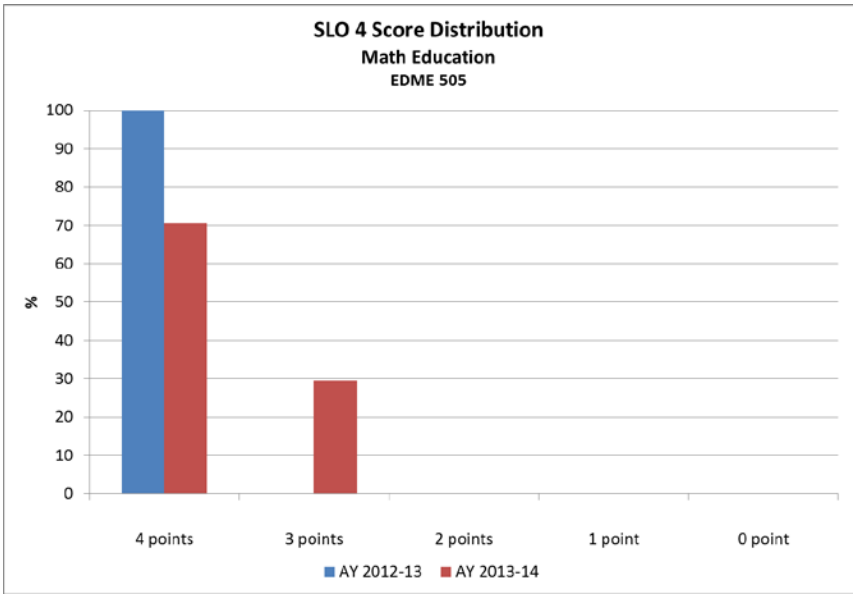


AY	N	Mean	SD
AY 2012-13	27	3.96	0.19

Outcome 4: Integrate contemporary technologies in mathematics planning, teaching, and assessment at the K-8 level.

Figure 6

Results from Figure 6 show that a total of 14 students scored a 4 on integrating contemporary technologies in mathematics planning, teaching, and assessment at the K-8 level in year one. The mean score of the SLO 4 from a total of 34 students was 3.71 with a 0.46 SD in year two.

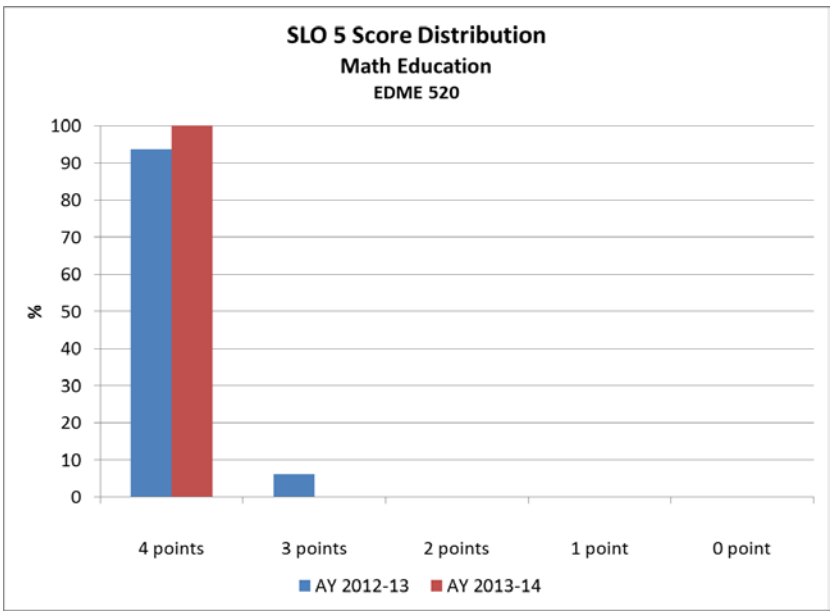


AY	N	Mean	SD
AY 2012-13	14	4.00	0.00
AY 2013-14	34	3.71	0.46

Outcome 5: Integrate pre-algebra and algebra content and pedagogy in K-8 classrooms.

Figure 7

Figure 7 below indicates that the mean scores of SLO 5 on integrating pre-algebra and algebra content and pedagogy in K-8 classrooms were increased from 3.94 in year one to 4 in year two. All students scored a 4 with the SLO 5 in year two.

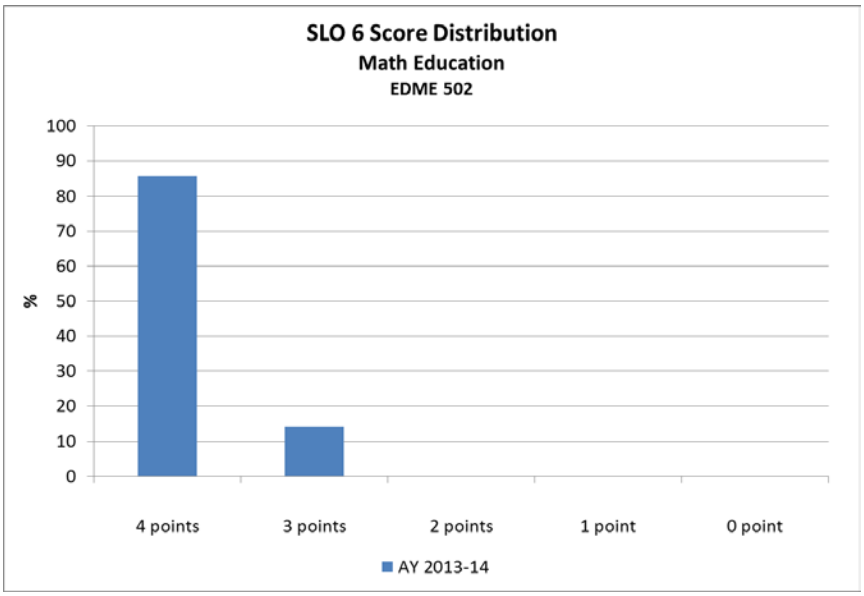


AY	N	Mean	SD
AY 2012-13	16	3.94	0.24
AY 2013-14	8	4.00	0.00

Outcome 6: Design research in their own teaching settings relating to mathematics education.

Figure 8

Figure 8 shows that the mean score of the SLO 6 on designing research in their own teaching settings relating to mathematics education from 14 students was 3.86 with during the 2013-2014 Academic Year.

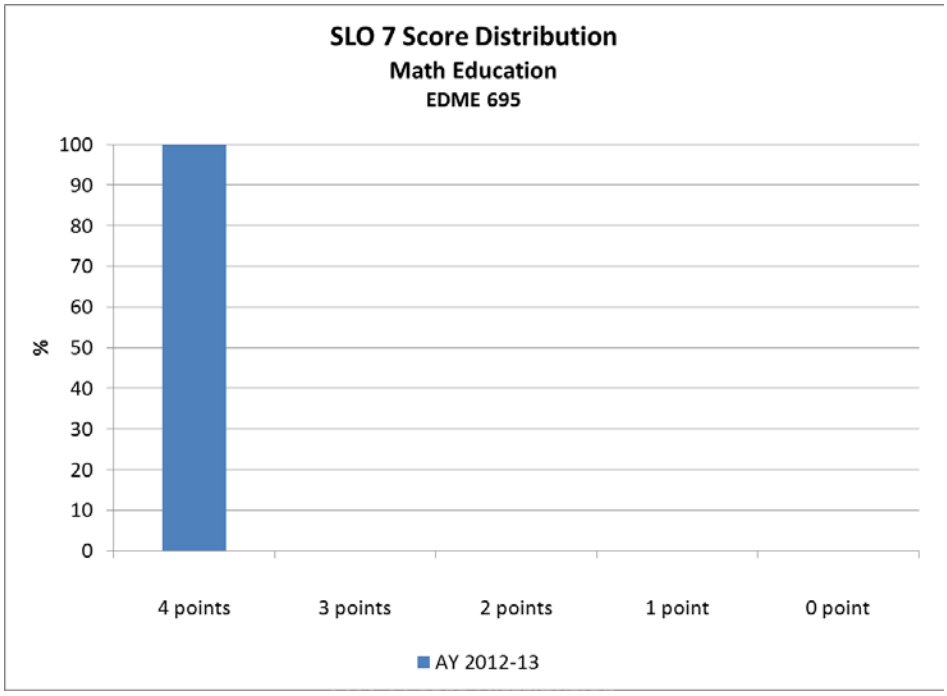


AY	N	Mean	SD
AY 2013-14	14	3.86	0.35

Outcome 7: Collect, analyze and interpret data related to research questions.

Figure 9

Figure 9 indicates that all 22 students scored a 4 on collecting, analyzing and interpreting data related to research question with the SLO 7.



AY	N	Mean	SD
AY 2012-13	11	4.00	0.00
AY 2013-14	12	4.00	0.00

APPENDIX B:
Program Effectiveness Data

Math Education
Exit Survey
Spring 2013

Program Advisement

Please rate your level of general satisfaction with each of the following:

#	Question	Very Satisfied	Satisfied	Dissatisfied	Very Dissatisfied	N	Mean
1	The ongoing advisement and program information I have received from my faculty/program advisor.	5	3	-	-	8	1.38
2	My advisor's knowledge of my program requirements.	4	4	-	-	8	1.50
3	My advisor's availability to meet at times that are convenient for me.	5	3	-	-	8	1.38
4	The quality of service/advising provided by the Graduate Office.	4	4	-	-	8	1.50
5	The accuracy and thoroughness of the information provided on the program web site.	3	5	-	-	8	1.63
6	The accuracy and thoroughness of the information provided on the college web site.	3	5	-	-	8	1.63
7	The orientation provided by the department/program.	3	5	-	-	8	1.63
8	The resources and services in the university library.	3	5	-	-	8	1.63

Technology Integration

Please rate your level of general satisfaction with each of the following:

#	Question	Very Satisfied	Satisfied	Dissatisfied	Very Dissatisfied	N	Mean
1	My instructors frequently used technology and media to effectively promote learning.	6	2	-	-	8	1.25
2	My instructors expected us to use instructional technology and media in completing our assignments.	7	1	-	-	8	1.13
3	In my program, I had sufficient opportunities to learn about using computer technology to enhance my academic and professional work.	7	1	-	-	8	1.13

Importance of Beliefs

How important do you think it is to:

#	Question	Very Important	Important	Somewhat Important	Not That Important	N	Mean
1	Use research- and evidence-based practices (pedagogy, counseling, etc.) in your professional work?	6	1	1	-	8	1.38
2	Read, understand, interpret and apply high quality research in your professional work?	6	1	-	1	8	1.50
3	Collaborate with colleagues and community organizations to support school/program improvement?	7	1	-	-	8	1.13
4	Act as a leader, whatever your role, to promote learning and success for all students/clients?	5	3	-	-	8	1.38
5	Act as a change agent to support innovative practices?	4	3	1	-	8	1.63
6	Engage in an ongoing process of inquiry to support and improve your practice?	7	1	-	-	8	1.13
7	Act as an advocate both for those you serve and yourself?	5	3	-	-	8	1.38

Program Contribution to Candidate Ability

To what degree has your program contributed to your ability to:

#	Question	A great deal	Somewhat	Not at all	N	Mean
1	Use research- and evidence-based practices (pedagogy, counseling, etc.) in your professional work?	7	1	-	8	1.13
2	Read, understand, interpret and apply high quality research in your professional work?	7	1	-	8	1.13
3	Collaborate with colleagues and community organizations to support school/program improvement?	4	4	-	8	1.50
4	Act as a leader, whatever your role, to promote learning and success for all students/clients?	3	5	-	8	1.63
5	Act as a change agent to support innovative practices?	4	4	-	8	1.50
6	Engage in an ongoing process of inquiry to support and improve your practice?	6	2	-	8	1.25
7	Act as an advocate both for those you serve and yourself?	4	4	-	8	1.50

Fieldwork or Clinical work

Please rate your level of agreement with the following questions regarding how well the fieldwork/clinical portion of your degree/credential program did the following:

#	Question	Strongly Agree	Agree	Disagree	Strongly Disagree	N	Mean
1	I interacted with diverse students/clients in my fieldwork/clinical experiences.	5	2	-	-	7	1.29
2	I was able to gain experience in a variety of settings through my fieldwork/clinical experiences.	5	2	-	-	7	1.29
3	I was encouraged to reflect on my content and professional knowledge through my fieldwork/clinical experiences.	5	2	-	-	7	1.29
4	I was encouraged to reflect on my professional dispositions through my fieldwork/clinical experiences.	5	2	-	-	7	1.29
5	My fieldwork/clinical experiences gave me the opportunity to synthesize and apply what I learned in my coursework.	5	1	1	-	7	1.43
6	My coursework prepared me well for my fieldwork/clinical experiences.	4	2	1	-	7	1.57
7	I had the opportunity to work collaboratively with others (faculty, supervisors, peers) to both receive and give feedback on practice during my fieldwork/clinical experiences.	5	2	-	-	7	1.29
8	My fieldwork/clinical experiences helped me develop strategies for serving all students/clients to promote their learning and success.	5	2	-	-	7	1.29

General Outcomes

Please rate your level of agreement with the following questions regarding general outcomes of your degree/credential program:

#	Question	Strongly Agree	Agree	Disagree	Strongly Disagree	N	Mean
1	My program facilitated the development of my critical thinking skills.	5	3	-	-	8	1.38
2	My program facilitated the development of my problem-solving skills	4	4	-	-	8	1.50
3	My program prepared me for professional practice.	5	3	-	-	8	1.38
4	My program helped me develop or refine my professional dispositions in a way that will allow me to serve all students/clients.	4	4	-	-	8	1.50
5	My program helped me develop the ability to link my lesson content or treatment/intervention plan to students' experiences and cultures.	4	4	-	-	8	1.50
6	My program prepared me to teach and engage all students, including English language learners and those with special needs.	3	5	-	-	8	1.63
7	I had the opportunity to work collaboratively with others (faculty, supervisors, peers) to both receive and give feedback on practice during my fieldwork/clinical experiences.	4	4	-	-	8	1.50

Math Education

Exit survey

Spring 2014

Advising and College Services

6. Please rate your level of agreement with the following statements about the academic environment and services.

#	Question	Very Satisfied	Satisfied	Dissatisfied	Very Dissatisfied	Total	Mean
1	I had access to the support I needed to succeed academically.	4	5	3	0	12	1.92
2	My program advisors was helpful and supportive.	6	4	1	1	12	1.75
3	At least one college staff member took an interest in my development.	6	4	2	0	12	1.67
4	At least one faculty member took an interest in my development.	6	4	2	0	12	1.67
5	Staff in the college were helpful and supportive.	6	5	1	0	12	1.58
6	The physical classroom space was conducive to learning.	5	5	2	0	12	1.75
7	I felt the college and my program were sensitive to non-academic responsibilities (e.g., work, family, etc.)	7	3	2	0	12	1.58
8	The quality of service/advising provided by the Graduate Studies Office was high.	7	5	0	0	12	1.42
9	The information on the college web site was accurate and thorough.	5	7	0	0	12	1.58

Technology, Library, and Other Resources

9. Please rate your level of agreement with each of the following:

#	Question	Strongly Agree	Agree	Disagree	Strongly Disagree	Total	Mean
1	My instructors frequently used technology and media to effectively promote learning.	7	3	1	1	12	1.67
2	My instructors expected us to use instructional technology and media in completing our assignments.	9	2	1	0	12	1.33
3	In my program, I had sufficient opportunities to learn about using computer technology to enhance my academic and professional work.	6	5	0	1	12	1.67
5	I use technology ethically and responsibly (accessibility, fair use, security, safety, etc.).	9	3	0	0	12	1.25

CED's Conceptual Framework

11. How important do you think it is to:

#	Question	Very Important	Important	Somewhat Important	Not That Important	Total	Mean
1	Develop the content knowledge and skills needed to be successful in your profession.	10	2	0	0	12	1.17
2	Understand how to collect and use assessment data to inform your practice.	10	2	0	0	12	1.17
3	Develop competence in working collaboratively within school, family, and/or community contexts.	11	1	0	0	12	1.08
4	Accept leadership roles in your profession in responsible and ethical ways.	11	1	0	0	12	1.08
5	Understand how to use technology and other innovative processes in appropriate ways within your profession.	9	3	0	0	12	1.25
6	Understand and appreciate the role of research in your profession and use scholarship in a continuous learning and inquiry manner.	9	2	0	0	11	1.18
7	See it as part of your professional responsibility to advocate for the interests of your students/clients.	10	2	0	0	12	1.17

12. To what degree has your program contributed to your ability to:

#	Question	A Great Deal	Somewhat	Very Little	Not At All	Total	Mean
1	Develop the content knowledge and skills needed to be successful in your profession.	11	0	1	0	12	1.17
2	Understand how to collect and use assessment data to inform your practice.	10	1	1	0	12	1.25
3	Develop competence in working collaboratively within school, family, and/or community contexts.	9	2	1	0	12	1.33
4	Accept leadership roles in your profession in responsible and ethical ways.	10	1	1	0	12	1.25
5	Understand how to use technology and other innovative processes in appropriate ways within your profession.	10	1	1	0	12	1.25
6	Understand and appreciate the role of research in your profession and use scholarship in a continuous learning and inquiry manner.	10	1	1	0	12	1.25
7	See it as part of your professional responsibility to advocate for the interests of your students/clients.	10	1	1	0	12	1.25

Learning Experiences and Outcomes

14. In your experiences in the College of Education during the current academic year, how often have you:

#	Question	Very Often	Often	Sometimes	Never	Total	Mean
1	Participated in a meaningful and productive group discussion on an educational issue/topic.	6	4	1	1	12	1.75
2	Participated in small or large group activities in class.	7	3	1	1	12	1.67
3	Discussed ideas from readings or class with a faculty member outside of class.	5	3	3	1	12	2.00
4	Received prompt, detailed, and useful written or oral feedback from a professor about your academic performance.	8	1	2	1	12	1.67
5	Had serious conversations with students who are very different from you in terms of race, religious beliefs, political views, personal values, etc.	8	1	2	1	12	1.67

17. Please rate your level of agreement with the following questions regarding how well the fieldwork/clinical portion of your degree/credential program did the following:

#	Question	Strongly Agree	Agree	Disagree	Strongly Disagree	Total	Mean
1	I interacted with diverse students/clients in my fieldwork/clinical experiences.	5	1	0	0	6	1.17
2	I was able to gain experience in a variety of settings through my fieldwork/clinical experiences.	6	0	0	0	6	1.00
3	I was encouraged to reflect on my content and professional knowledge through my fieldwork/clinical experiences.	6	0	0	0	6	1.00
4	I was encouraged to reflect on my professional dispositions through my fieldwork/clinical experiences.	6	0	0	0	6	1.00
5	My fieldwork/clinical experiences gave me the opportunity to synthesize and apply what I learned in my coursework.	6	0	0	0	6	1.00
6	My coursework prepared me well for my fieldwork/clinical experiences.	6	0	0	0	6	1.00
7	I had the opportunity to work collaboratively with others (faculty, supervisors, peers) to both receive and give feedback on practice during my fieldwork/clinical experiences.	6	0	0	0	6	1.00
8	My fieldwork/clinical experiences helped me develop strategies for serving all students/clients to promote their learning and success.	6	0	0	0	6	1.00

General Outcomes

18. Please rate your level of agreement with the following questions regarding general outcomes of your degree/credential program:

#	Question	Strongly Agree	Agree	Disagree	Strongly Disagree	Total	Mean
1	My program facilitated the development of my critical thinking skills.	7	4	0	1	12	1.58
2	My program facilitated the development of my problem-solving skills.	7	4	0	1	12	1.58
3	My program prepared me for professional practice.	6	5	0	1	12	1.67
4	My program helped me develop or refine my professional dispositions in a way that will allow me to serve all students/clients.	7	4	0	1	12	1.58
5	My program helped me develop the ability to link my lesson content to students' experiences and cultures.	7	4	0	1	12	1.58
6	My program prepared me to teach and engage all students, including English language learners and those with special needs.	5	5	1	1	12	1.83
7	My program prepared me to use technology and other innovative approaches to work collaboratively with others and to both receive and give feedback on practice during my coursework.	8	3	0	1	12	1.50

Math Education
Alumni Survey
2013

General Outcomes

As a result of my educational experience:

#	Question	Strongly Agree	Agree	Disagree	Strongly Disagree	N	Average Value
1	I developed the content knowledge and skills needed to be successful in my profession.	7	1	1	-	9	3.67
2	I understand how to collect and use assessment data to inform my practice.	7	2	-	-	9	3.78
3	I developed competence in working collaboratively within school, family, and/or community contexts.	5	3	1	-	9	3.44
4	I can accept leadership roles in my profession in responsible and ethical ways.	6	3	-	-	9	3.67
5	I understand how to use technology and other innovative processes in appropriate ways within my profession.	6	3	-	-	9	3.67
6	I appreciate the role of research in my profession and use scholarship in a continuous learning and inquiry manner.	7	1	-	-	8	3.88
7	I see it as part of my professional responsibility to advocate for the interests of my students/clients.	8	1	-	-	9	3.89

Career Preparation

Given your work experiences, to what extent did your program prepare you for your career?

#	Answer	Bar	N	%
1	Completely		3	33.33%
2	A great deal		3	33.33%
3	Somewhat		3	33.33%
4	Not at all		0	0.00%
5	Not applicable		0	0.00%
	Total		9	100.00%

Candidate Satisfaction

The educational experiences were worth the time and money invested in my educational program.

#	Answer	Bar	N	%
1	Strongly Agree		7	77.78%
2	Agree		1	11.11%
3	Disagree		1	11.11%
4	Strongly Disagree		0	0.00%
	Total		9	100.00%

Have you continued your education since you graduated?

#	Answer	Bar	N	%
1	Yes		2	22.22%
2	No		7	77.78%
	Total		9	100.00%

Please check all of the professional accomplishments (within the last 3 years) that apply:

#	Answer	Bar	N	%
1	Leadership position in a professional association		2	22.22%
2	Recipient of an award related to your profession		0	0.00%
3	Job promotion		2	22.22%
4	Attendance at a professional conference		8	88.89%
5	Presentation at a professional conference		3	33.33%
6	Publication		0	0.00%
7	Other (Specify)		0	0.00%
	Total		15	100.00%

Please type your comments and suggestions regarding your program and/or experience at the College of Education at CSULB.

Text Entry
Dr's An, Wu, and Burnett did a great job. I liked the progression of classes and how the classes and assignments built toward our final paper.
I suggest designing projects that involve students as well as working professionals to create mentoring and networking opportunities while working on degree.
I was very satisfied with the College of Education at CSULB. I learned a lot from my Master's in Math Education. Dr. Wu and Dr. An were very supportive during the two years of the program.

EDME Program Post-Survey Response Data

Candidate Experiences with Signature Assignments and Projects

AY 2011-2014

Tables 1 and 2, below, show some examples of candidates' responses to Part II ("Assignments and Projects") of the EDME program post-survey administered to graduates of the 2011-13 and 2012-2014 cohorts . The results highlight respondents' overall satisfaction with the quality and effectiveness of the EDME program based on candidates' positive experiences with assignments or projects deemed valuable and/or helpful from each course in the program.

Table 1

Valuable Assignments and Projects (2011-2013)

EDME Course	Please indicate the specific assignments or projects that were valuable and helpful to your teaching practice or professional growth.
EDME 520 Algebra: Research-based Pedagogy, Summer 2011	• The case study was fun because it allowed us to use practical strategies. • Great opportunity to try new things with a struggling student • I enjoyed working with my client, Rachel. She had very low math skills and it was nice to work one-on-one with a student. It helped me to understand that she had many misconceptions about multiplication and division. I liked that we were given time in class to type up the daily reflection/notes.
EDME 550 Global Perspectives in Math Ed, Summer 2012	• This class was so much fun because we were able to meet Chinese students! • It was valuable and helpful because it opened our eyes up to many different styles of teaching. • My favorite class! I fell in love with the Chinese students. It was very eye-opening to see the way children from a different culture learn and interact. I loved going on the outings with the children!! • Great opportunity to use SADAI strategies on a large scale
EDME 500 Contemporary Issues in Math Ed, Fall 2011	• The literature review was good because it was foundational to action research. • The writing was helpful because Burnett gives helpful feedback on writing. • It was valuable because I was able to understand current strategies and challenges.
EDME 501 Assessment in Teaching Math, Fall 2011	• The TIMSS analysis was very interesting. • It was valuable and helpful because I learned a lot about monitoring and using different forms of assessment. • I really enjoyed this course. I liked reading the TIMSS and PISA articles-it was very informational and interesting. I did like to find out my students' disposition in my class. • PISA analysis helped me to form some valuable perspective about why some students achieve at a high level while others who are capable do not.
EDME 503 Advanced Methods in Teaching Math I, Spring 2012	• The MSAs were very challenging and thought provoking. • It was valuable and helpful because we learned multiple teaching methods. • I thought the RtI with my five students was very beneficial to my future teaching as a professional. My participants were very grateful and all showed great improvements. • Action Research on Response to Intervention I gained a greater appreciation for the need to teach a student where they are at instead of focusing only on the current curriculum.

EDME Course	Please indicate the specific assignments or projects that were valuable and helpful to your teaching practice or professional growth.
EDME 504 Advanced Methods in Teaching Math II, Fall 2012	• The investigation project was useful because it ties into real life. • The CCS lesson project was helpful in learning more about Common Core. • It forced me to ask the higher level questions and get away from my typical lecturing style. • Weekly Model-Strategy-Application work.
EDME 502 Research in Math Teaching and Learning, Spring 2012	• The first three chapters of the action research were the most helpful because they allowed to start writing our action research. • It was valuable and helpful because we learned about researching and data analysis. • This was a great course because we practiced using SPSS and we found articles that related to our own research.
MTED 500 Advanced Perspectives of Foundational.., Fall 2012	• The reflections were very helpful to challenge our thinking about mathematical concepts. The class activities were also fun to do. • It was valuable and helpful because we learned about analyzing research. • I enjoyed researching the Fibonaccis and Lucas numbers. • I like that we worked together in groups during class time. Most assignments were completed during class.
EDME 505 Technology in Teaching Math, Spring 2013	• Sharing the websites was very helpful. • It was valuable and helpful because we gathered many new resources. • The webquest was an easy assignment that could be very useful for all students. Also, I liked to write the children's book. It didn't sound very exciting in the beginning, but once I started working, I didn't want to stop! I enjoyed watching others present their webquests, and children's book. • Webquest is something that I will use each Christmas break with my algebra students.
EDME 695 Seminar in Education, Spring 2013	• The action research was so helpful because we received detailed feedback from Dr. An. • It was valuable and helpful because we learned about how to analyze data and complete an educational research project that will help us in our future teaching. • I liked that we were able to work one-on-one with the professor during individual meeting days. Dr. An was so extremely helpful in providing feedback for our research paper. I liked that this course is strictly for our research paper, with very few additional assignments. • Research assignment will change how I assign homework for the rest of my career.

Table 2

Valuable Assignments and Projects (2012-2014)

EDME Course	Please indicate the specific assignments or projects that were valuable and helpful to your teaching practice or professional growth.
EDME 520 Algebra: Research-based Pedagogy, Summer 2012	• Math Clinic- it allow me to understand how one should provide intervention to students and learn of materials available • Analyzing your own video clips is an eye opener. You can evaluate yourself and make improvements. • Great experience to work with psychologists in the learning experience of a child in their math. • Tier III intervention- gave practice • Reading assignments- Informed about Singapore math • Insight into applications of RtI frameworks such as CBMS and progress monitoring charts.
EDME 500 Contemporary Issues in Math Ed, Fall 2012	• Multicultural Math Activity: It was so fascinating to see math history from around the world. It really launched me into being a "math person" • Beginning research on a topic asap was very beneficial because the time went by fast. • Sharing multicultural math ideas, it allowed me to learn of different tools to introduce to my class • Sharing technology implemented in class • Literature reviews were very helpful because they prepared me on how to use APA and understand the correct way to • Great group cooperation! • Lit review paper- Researched effects of teacher content knowledge on teaching math
EDME 503 Advanced Methods in Teaching Math I, Fall 2012	• Planning the investigation task: This was fun for students and real world application. • Great use of strategies and samples. I incorporated them in my classroom. • MSA- Helped with content knowledge • CCSS Map- Helped to understand CCSS better • Discussions of the importance of student dispositions and use of MSA for the focus, coherent and rigor of math instruction. • Disposition drawings, analyzing student errors, CCSS Project, and Error of the Week •
EDME 501 Assessment in Teaching Math, Spring 2013	• Analyzing CST Qs: Very helpful to know what students need to know. • I learned ways and methods to analyze students' assessments and work. • Creating an assessment and studying the data • Central limit Theorem and exposure to statistical applications for collecting and analysis student data to drive instruction. • Action Research on Assessment • California standards Tests Analysis • Analysis of Smarter Balance • Reading and Discussions

EDME Course	Please indicate the specific assignments or projects that were valuable and helpful to your teaching practice or professional growth.
EDME 504 Advanced Methods in Teaching Math II, Spring 2013	• Disposition AR: Very interesting to see how disposition affects learning. • Disposition Project • Math at the Beach • Practices Power points • Case Study has not been the first case study that I had had the opportunity to analyze and find a solution for the students' issues. We have SSTs and IEP where case studies need to be written down frequently. In the past, I did not have anyone else analyzing on a case study I had reflected on. Having someone giving advice and references as to where I can go to get ideas makes it easier to find strategies to put to use. • Performance task as culminating activities and summative assessments.
EDME 550 Global Perspectives in Math Ed, Summer 2013	• Watching and analyzing the Chinese teachers' lessons. They were very powerful lessons. • Chinese teacher are dedicated and really know their content. They challenge their students to the next level of learning. This motivates not only the learner but also the instructor. • Watching teachers teach, both classmates and Chinese teachers • Going over the CCSS math frame work • Exposure to student learning through follow-up questions focused on student thinking. • Participating in study abroad to exchange ideas from educators across the world. Developing a lesson for young learners was fun, especially since children enjoy learning.
EDME 502 Research in Math Teaching and Learning, Fall 2013	• Smarter Balanced AR: It was very helpful to take a close look at the new assessments. • Having the opportunity to work on a research project for the first time was a great experience. • Introduction and applications of SPSS. • Research proposal for our first three chapters. • Action Research it provided us a better understanding of the new expectations.
MTED 500 Advanced Perspectives of Foundational, Fall 2013	• Alternative Algorithms Paper: I learned multiple ways to multiply and divide. • The last project about different ways of teaching one concept gave me the opportunity to learn more than one way of teaching one concept. • The challenge of thinking about math differently. • Rigor of math content knowledge. • I learned greatly from developing a math research paper.
EDME 505 Technology in Teaching Math, Spring 2014	• Making a website: I feel like I can do anything now! • Gave me to opportunity to learn about others and the new ways to use technology. • The making of children's book was exceptional. • Designing a webquest and children's literature book. • Sharing educational sites for reference in future.
EDME 695 Seminar in Education, Spring 2014	• Chpts. 4, 5, 6: It was great to take part in a research study of my own. • Having Math at the Beach gave more confidence as a presenter. This course gave the power to be a leader among my colleagues. • Completing and meeting in individual groups to receive support from the instructor for completion of action research.