

## TOPIC: SUCCESS RATIOS

Success Ratios for Accelerate Online/OPTIONS  
An Online Alternative Certification Program

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## Success Ratios for Accelerate Online/OPTIONS An Online Alternative Certification Program

Abstract: The *Accelerate Online/OPTIONS* program provides those possessing science degrees with a teacher certification program that can be completed in 18 months. The program consists of an online curriculum, an early field experience and a year-long paid internship. To determine program effectiveness across time, three success ratios [candidates placed/total candidates; teachers certified/total candidates; and teachers retained/teachers certified] were established and calculated each year. To illustrate these quantitative values, the ratio, teachers retained/teachers certified across three years is .84. This value is comparable to retention ratios of teachers following their initial year in classrooms.

## Perspectives

Recurring accounts of local school districts and state departments of education experiencing teacher shortages continue to appear in professional journals (Budig, 2006; Guarino, Santibanez, & Daley, 2006), daily newspapers (Chaker, 2006), and the evening news offered by broadcast networks. The following phrase illustrates a common message in these accounts. Approximately half of our nation's promising young educators as well as their more experienced colleagues choose to leave their schools during their first five years in the profession (Levin, 2006; Weaver & O'Brien, 2004). Of those who stay, especially teachers in high need settings, some remain to gain the seniority needed to transfer to schools whose needs are not as pronounced. While not affecting the overall teacher supply in a state, transfer from high need settings can and do lead to continuing shortages of experienced teachers in high-turnover schools (Hull, 2004).

Teacher turnover can be grouped under two categories, migration and attrition with about equal numbers of exiting teachers grouped under each category. Ingersoll (2003) reports that teachers usually offer personal reasons for exiting their teaching position, but some (about one-fourth of those leaving) add that job dissatisfaction due to low salaries, lack of instructional and emotional support, feelings of isolation, and little influence on how they do their work are reasons for their departure from classrooms.

One view holds that teacher shortages force school districts to lower standards to fill teacher vacancies that inevitably results in high levels of under qualified teachers and lower student performance. Policy responses have included increasing the supply of teachers through recruiting new candidates to teaching with career-change programs, (i.e., troops-to-teachers), Peace Corps-like programs (i.e., Teach for America), alternative certification programs (Birkeland & Peske, 2004; United States Department of Education [USDE], 2004), and financial incentives (signing bonuses, student loan forgiveness, housing assistance, tuition reimbursement). The "No Child Left Behind Act" has provided federal funding for many of these initiatives (Ingersoll, 2003), including alternative certification programs supported by the Transition To Teach (TTT) program. This program is described in Chapter B of the No Child Left Behind Act. Its purposes are "(a) to recruit and retain highly qualified mid-career professionals (including highly qualified paraprofessionals), and recent graduates of an institution of higher education, as teachers in high-need schools, including recruiting teachers through alternative routes to certification; and (b) to encourage the development and expansion of alternative routes to certification under State-approved programs that enable individuals to be eligible for teacher certification within a reduced period of time, relying on the experience, expertise, and academic qualifications of an individual, or other factors in lieu of traditional course work in the field of education" (American Institutes for Research [AIR], 2006; USDE, 2006).

*Accelerate Online/OPTIONS* is an alternative certification program that we have developed to address the purposes of the TTT program. This paper begins by describing our online approach to preparing teachers; then continues by providing a research question, the methods used to obtain data to address this question, and concludes with our results and conclusions drawn from the analysis of these data.

### Program Description

#### *Overview of Accelerate Online/OPTIONS*

This program was established to provide a flexible alternative certification program for life science, physical science, and mathematics (grades 8-12) that has three features setting it apart from other alternative certification programs offered in Texas. First, it is offered through a College of Education and Human Development as a continuing education program that does NOT yield student credit hours to the University, thus reducing costs (no tuition expenses) for candidates. Second, because the pedagogy content associated with state licensure is accessible, 24/7 as an on-line experience, certification can be completed by a baccalaureate graduate, graduate student or science/engineering professional in 12-18 months from any location in Texas. Third, the program has been developed from a partnership between a College of Education and Human Development and a College of Medicine that is providing a talent pool of candidates with strong academic backgrounds in science and mathematics.

The curricular elements of *Accelerate Online/OPTIONS* consist of an On-line curriculum, an early field experience and a year long internship. These program components have been developed to equip the candidate with knowledge and skills identified as necessary for a beginning teacher by the state standards, that is, the State Board of Educator Certification Pedagogy and Professional Responsibilities Standards (State Board of Educator Certification [SBEC], 2002).

#### *Program Implementation*

Extensive marketing efforts were undertaken to launch this program because it differs substantially from other teacher certification programs offered by the college.

*Admission of Candidates.* The following requirements for admission into *Accelerate Online/OPTIONS* were adopted from the undergraduate teacher preparation programs at the University. In order to be admitted the applicant must:

- either be a college graduate or graduate student, or be within one year of completing a baccalaureate. Applicants must have at least a 2.5 GPR in their baccalaureate course work attempted or a 2.75 GPR on the last 60 hours of the baccalaureate degree or 3.00 GPR on advanced degree course work.
- have a minimum of 24 semester hours in a specific content specialization, or 36 semester hours in a composite field (including a minimum of 3 semester hours in all sub-areas).
- pass or be exempt from TASP (basic competency test). Holding a baccalaureate degree exempts the applicant from this requirement.

- pass the required Texas Examinations of Educator Standards (TExES) content exam(s). This requirement was included to enable our candidates to be considered “fully qualified” in content area as defined by the “No Child Left Behind” guidelines.
- have access to an Internet-capable computer.
- pass a background check of any criminal activity relating to children.
- submit two letters of recommendation.
- demonstrate verbal fluency with English and convey a genuine interest for teaching youth in a personal interview with program staff.

These adopted requirements provide quality assurance to teacher education faculty that entry requirements into this program do not differ from the requirements they developed and approved for the undergraduate teacher education programs. Although demonstrating verbal fluency in English in a personal interview was added to the selection criteria, after a number of candidates exhibited some difficulty in communicating orally in English.

*Candidate Recruitment.* Extensive recruitment efforts have been implemented by the program staff. A sampling of marketing techniques we have applied include: ads placed in the campus newspaper targeting particular times in the semester; ads in the alumni association quarterly journal; vis-à-vis interactions at career fairs and booths at professional conferences; poster placements on bulletin boards at strategic locations on campus (close proximity to college advising offices); website banner ads; program announcements provided on an intranet bulletin board; program description links on college homepage and recently Google search engine “adwords” and URL advertising based on keyword selection by potential applicants. During this time focused recruitment efforts were conducted by our college of medicine partner with medical graduate students and bench scientists at that institution. Those efforts have resulted in 19% of the total program applicants holding advanced academic or professional degrees.

*Monitoring Candidate Progress.* An extensive digital monitoring system was developed for this program that includes an on-line registration system with password protection for candidate entry, and an underlying management tracking resource across the modules presented in Figure 1. These online modules are accessed from the eEmpowerment Zone (eZone) platform. The eZone, is a dynamic, on-demand delivery platform developed in-house that enables cohorts/communities of teaching candidates to access instructional modules, as well as integrated resources and tools that support teaching and learning, supervision, resource evaluation and collaboration. By organizing instructional web-based modules, electronic portfolios, resources and tools into an integrated system, teaching candidates can seamlessly complete the online and field-components of the program, while receiving extensive support from university supervisors, mentor teachers, fellow students and program staff.

Place Figure 1 about here

For the candidate, the management system serves to affirm her (80% of our sample is female) program status in terms of completed assignments and module deliverables and it will return her to the section of a module that was exited before the module was completed. As a management resource for program administrators, this digital monitoring system attends to each candidate's visits to a module, the elapsed time spent examining the contents of the module and whether items requiring a response have in fact been completed as well as module pretest and posttest performances by the candidates. Given these data, candidate progress in completing the modules are reviewed to determine whether individual candidates are progressing satisfactorily in the program, as well as assessing whether modules have potential design flaws given the collective performance of the candidates on particular activities and their overall performance on the module.

*Early field experience and postings to ePortfolio.* Early field experience activities are assigned to engage candidates in thinking about classroom actions in terms of the principles and concepts presented in the online modules. This field component has been designed for the candidate to experience a gradual induction into the teaching environment through observing quality teaching and gaining insights about the school's organizational culture. The culminating activities for this experience are: a follow-me-teach activity where the candidate observes a teacher deliver a lesson to one period and then teaches a class the same lesson; a few days later, the candidate develops and teaches their own lesson to both classes. Candidates are instructed to upload completed lesson observations and interview forms to their ePortfolio across the multiple week experience to document their observations and reflections.

*Candidate Placement in Final Field Experience.* Establishing effective strategies for placing candidates in paid teaching assignments has evolved from *denial* (affirming among ourselves that job placement was NOT our responsibility) to *affirmation* (actively marketing all of our candidates to school districts). Our goal is to place *all* of our candidates who have completed their online modules and early field experiences in paid internships. As placement protocols have evolved, we have actively communicated the qualities of the *Accelerate Online/OPTIONS* program and the credentials of our candidates to school officials in assisting our candidates obtain internships. Approaches we have employed include: *direct mailings* to school districts about our available secondary mathematics and science teaching candidates; *personal visits* with Human Resource directors at fall and spring Career Fairs regarding our available teaching candidates; *booths* at the Texas Association of School Administrators/ Texas Association of School Boards annual meetings to inform school administrators and board members about the program and our available candidates; *luncheons* with superintendents and Human Resource professionals to promote teaching candidates participating in the program; and direct communications by our Coordinator of Placement with human resource officials and school administrators.

We have found that powerful tools in recruiting schools to hire our candidates are the ePortfolios the candidates have developed after beginning their

programs. To facilitate reviewing our candidates, an online ePortfolio Center <http://empowermentzone.tamu.edu/portfolios/center/> was set up for school administrators to search ePortfolios of teaching candidates – by Last Name, or Certification Area, or the candidate’s preferred location or regional preference. Over the course of these events and activities, we have learned that contacting secondary school principals and human resource officials about our available candidates and providing them access to the candidates’ ePortfolios are very effective placement tools.

*Supervisor and Mentor Teacher Support.* Guidelines and responsibilities for the intern, the university supervisor and the mentor teacher are stated in the *Accelerate Online Internship Handbook*. This Handbook is provided to each intern and their support team members in professional development experiences just prior to the final field experience. The *Handbook* was developed from protocols and experiences of supervisors of student teachers in the traditional teacher preparation programs at the university. The resulting guidelines reflect successful practices gleaned over time by teacher educators and university supervisors.

First, interns submit their instructional plans weekly to their ePortfolio to be reviewed by their supervisors and mentor teachers in preparation for classroom visits. Although six classroom visits across the school year are specified to meet certification expectations, supervisors have observed their interns more frequently, often registering nine or more classroom visits.

Second, the college of medicine partner has introduced a website for life science teachers, BioEdOnline ([www.BioEdOnline.org](http://www.BioEdOnline.org)). In reviewing this professional development website for secondary teachers, Science NetLinks ([www.sciencenetlinks.com](http://www.sciencenetlinks.com)) notes this website “highlights the foremost current developments in biology. It is written in a news format that is simple to read, and covers a broad array of topics such as biodiversity, childhood obesity, exobiology, mad cow disease, stem cell research, and wildlife genomics.” Supervisors of life science interns are encouraged to promote this resource with their interns.

Third, supervisors and mentors are provided a cross-referenced listing of the teaching skills on the midpoint and final classroom evaluation form with possible resources for targeted professional development. Further, supervisors and mentors are informed of scheduled professional development experiences that are offered to all candidates participating in *Accelerate Online/OPTIONS* to orient them to the different phases of the program (i.e., orientation to online resources and eZone; orientation to school setting and planning for the first week of school; review sessions on former editions of the TExES Pedagogy and Professional Responsibilities [PPR] examination) in order gain a sense of what experiences and information have been provided to the candidates.

Fourth, a digital learning community has been established among our supervisors of interns for sharing ideas and digital resources. This learning community arose to address the need expressed by for a forum to discuss challenges they face in supporting their interns.

Hopefully the preceding description of our curricular elements, the eZone, and the processes we have implemented in recruiting, providing hands-on

instructional experiences, monitoring performances, and placing interns provide sufficient background to understand our need to know quantitatively, whether our program has become more successful as time has passed. The following research question has been phrased to guide this inquiry.

### Research Question

What are the success ratios [candidates placed/total candidates; teachers certified/total candidates; and teachers retained/teachers certified] across the implementation of the *Accelerate Online/OPTIONS* program?

### Methods

#### *Sample*

The sample includes 142 individuals who have provided applications to *Accelerate Online/OPTIONS* across three years. This sample consists of 114 females and 28 males, across four teaching fields: Life Sciences ( $n = 103$ ), Physical Sciences ( $n = 10$ ), Mathematics ( $n = 11$ ), Other ( $n = 18$ ). The highest academic degree individuals in this sample hold are: PhD/MD ( $n = 27$ ), MS ( $n = 12$ ), or BS ( $n = 103$ ). Five ethnicities are represented in the sample: Euro-American ( $n = 119$ ), African-American ( $n = 3$ ), Asian-Indian ( $n = 15$ ), and Hispanic ( $n = 5$ ). One final demographic value for this sample is that individuals are either recent graduates ( $n = 99$ ), or mid career changers ( $n = 43$ ). From these values, we note an applicant to our program often has been a Euro-American female who majored in a life science program and recently graduated with a baccalaureate degree.

#### *Data Collection*

From the preceding description of the sample, it is evident that extensive biographic data on applicants have been compiled into the eZone database beginning with the submission of an application. Assuming all admission criteria have been met, the applicant is then officially accepted into the program as a candidate. In addition, the eZone database stores extensive performance data on all candidates related to online instructional module assessments, classroom observations, and ePortfolio assessments. The final steps to be certified as a secondary science or mathematics teacher assuming a successful final field experience are that the candidate passes the TExES Pedagogy and Professional Responsibilities (grades 8-12) examination (i.e., meeting or exceeding the State's criterion score of 240) and submits an application to program staff who verify the candidate's successful completion of certification requirements. At present, every *Accelerate Online/OPTIONS* intern who has sit for the TExES Pedagogy and Professional Responsibilities examination has attained a passing score. Scores from the TExES tests and additional program data are added to the record of each candidate as the information is received resulting in an eZone record containing more than 300 variables on each candidate who successfully completes the program.

#### *Data Analysis*

The Statistical Package for the Social Sciences (SPSS, 2004) was used to conduct descriptive statistical analyses to determine the status of applicants with

respect to completing teacher certification in our program. The resulting summaries presented in the following tables relate successful program entry, program completion and continuing practice as a classroom teacher partitioned by the degree held by the applicant and the year the applicant joined the program.

### Results

Candidate status across years of implementation was initially selected as the outcome variable of interest in order to determine whether our program was becoming more effective as we implemented the myriad of processes that constitute this program. The following tables provide summaries of candidate status across the three years of program operation.

Place Table 1 about here

Twenty-six individuals applied to the program in year 1. Of these applicants, 10 became candidates meeting admission requirements and 8 candidates completed all requirements and have been certified, although one of these candidates fulfilled the final field experience requirement in year 3. All of the program completers passed the state pedagogy examination on their first attempt and were certified and continued classroom teaching during the following year, but one of these teachers elected to pursue other interests at the midpoint of their second year in the classroom. The remaining 7 teachers have continued their careers as educators although one of these teachers has migrated to different school in a neighboring school district.

Place Table 2 about here

During the second year of implementation, 22 individuals applied to the program with 20 of these individuals meeting admission requirements to become candidates. Unfortunately one of these candidates was dropped from the program after 18 months due to not pursuing or accepting a final field experience to complete certification. Nineteen candidates were placed in secondary teaching assignments, completed all requirements and were certified; although one of these candidates resigned from an initial internship, but returned to the program and completed certification in a different assignment during year 3. All 19 of these teachers continued to teach following their certification, yet 6 of these teachers migrated to different school districts. Attrition has also had an effect on this cohort with five teachers resigning during or after their second year of teaching citing family relocation and parenting responsibilities as reasons for not renewing their teaching contracts.

Place Table 3 about here

Ninety-four (94) individuals submitted applications during year 3 of implementing *Accelerate Online/OPTIONS*. A significant number of these applicants hold baccalaureate degrees and have applied to this program in part

because the traditional undergraduate secondary certification program was deleted by the college during the year. In addition, recent recruitment efforts have focused especially on this group of potential candidates. Of these applicants, 53 became candidates meeting admission requirements, 50 began their final field experiences, and 37 of these candidates have completed all requirements for certification. Thirty-three of these just certified teachers have continued in the classroom following their internship year, although 13 migrated to different districts. Of the remaining 13 candidates who began their final field placements, 10 interns are currently completing their final field experiences and three interns resigned from their internship positions to pursue other career options and forego teacher certification.

We note from examining Tables 1, 2, and 3, that a sizeable number of applicants across all levels of academic preparation were not admitted into our online certification program. Attrition ratios (# of applicants not admitted/ # of applicants) partitioned by highest degree attained were found to be .56 for PhD/MD and .25 for MS and .38 for BS applicants. Reviewing admission criteria and corresponding data, we identified the following four factors that have affected non-admission decisions.

One of the most common reasons for non-admission has been failing to complete the application process with 25 applicants failing to provide one or more required elements needed for a complete application to the program and were not admitted. Apparently a “change of heart” about becoming a teacher occurred for the applicant during the process of submitting a complete application packet. Possibly the tasks of obtaining transcripts to document their GPA and course work in their specialization, the background check of criminal activity, obtaining two support letters, and the prospect of not successfully completing the TExES content test caused some applicants to reconsider their career decision about becoming a teacher. Perhaps these admission requirements were too rigid and time consuming that scientists and engineers, and some recent graduates with science majors, were discouraged from transitioning into teaching as suggested by recent reports (National Research Council [NRC], 2000; USDE, 2002). Yet these admission procedures are thought to be necessary to assure ourselves and employing school districts the applicant has at least been carefully screened to teach secondary students.

Low undergraduate grade point ratios resulted in non-admit decisions for 5 applicants with BS degrees, although each of these individuals had transcripts that documented sufficient academic courses in the teaching field to meet admission requirements. Less pronounced but meaningful is the listing of two applicants who were not admitted because personal views and expectations about teaching were expressed during their interviews that are quite incongruent with actual classroom environments. To address these untenable expectations about the classroom, questions have been integrated into the interview process and assessed on each applicant about their views regarding high achievement orientation, accepting responsibility, demonstrating critical thinking, being organized, being motivated, being respectful of others, and supporting the goals of the organization. Taking into account applicant views and characteristics associated

with these attributes are supported in the teacher education literature (Allen, 2003; National Council on Teacher Quality [NCTQ], n.d.).

Twenty-five of the applicants who were not admitted to the program did not attain the TExES content test criterion score for admission. Masters level applicants performed as expected with all of these applicants reaching or exceeding the criterion score of 240. Yet similar results did not occur for the PhD/MD applicants with 6 applicants holding advanced degrees not achieving the criterion score. Also, 19 applicants holding baccalaureate degrees with academic concentrations in the content domain being tested failed to reach the admission criterion score on the TExES content test. Although reasons for the less than expected performance of PhD/MD applicants have not been determined, one conjecture is that the advanced degree applicants have become so specialized in their graduate or professional studies that some areas of the content domain addressed on the test had not been considered for several years. A second hypothesis that we have posited is that these individuals over-analyzed the test questions. Whatever the reason or reasons for these less than expected performances, this TExES criterion score standard for admission has impacted whether an applicant has become a candidate in our teacher preparation program. This finding suggests the content test admission standards are not as lax as has been suggested in the literature (USDE, 2002).

Looking at the program participants from the perspective of program completers was then undertaken to address the research question that guided this inquiry. The following table (Table 4) presents the three success ratios (i.e., candidates placed/total candidates; teachers certified/total candidates; and teachers retained/teachers certified) across years of program implementation that were the foci of this inquiry.

Place Table 4 about here

The success ratio (Candidates Placed/Total Candidates) values across years may be interpreted that our strategies for arranging and securing final field placements are serving candidates well by assisting them in obtaining final field placements. Further, the number of candidates has increased substantially during each succeeding year indicating recruitment of individuals who meet the admission criteria has received greater emphasis as program implementation has continued.

The success ratio (Teachers Certified/Total Candidates) values suggest to us that our online curriculum and final field experience support system consisting of university supervisors, mentor teachers, online resources and online collaboration among candidates and their supervisors have enabled a high proportion of the candidates to succeed in fulfilling certification requirements across 18 months. Unfortunately a few candidate placements have resulted in early resignations from the program, two during year 1 and three during year 3. One hypothesis to explain the resignations that has been supported by responses obtained from exit interviews with the resigning intern was that the intern held idealized and unrealistic expectations about the motivation of secondary students.

These expectations were quickly dispelled in the early days of the internship creating an untenable situation for the intern. The occurrence of these unsuccessful intern placements calls for program refinements to address personal views and expectations about teaching that are incongruent with actual classroom environments, as well as other unmet needs of the candidates during this crucial part of their certification program.

Finally, the success ratio (Teachers Retained/Teachers Certified) values across the program indicate whether these teachers remained in teaching following receipt of their teacher certification. While it is not evident from the information presented in Table 4, the teachers retained for year 1 are currently in their fourth year of teaching, (that is, one year internship followed by three consecutive years in the classroom); year 2 retained teachers are currently in their third year of teaching; and year 3 retained teachers are currently in their second year of teaching. The cumulative success ratio for retention (.84) across the implementation of this program compares quite favorably with retention values of first year teachers of .86, and second year teachers of .76 reported by Ingersoll (2003).

### Conclusions

There are several lessons we have learned across the three-year implementation of our Transition To Teach program. First, with the curriculum being provided online and staff members having personal contacts throughout the state that have enabled arranging supervision and mentoring services to the candidates, our program has expanded our service area from driving distance to campus (usually within a 100 mile radius) to the state borders (from 200 to 700 miles from campus). This program characteristic is an important promotional attribute as we strive to sustain this program. Second, the idea of aggressively promoting and marketing our program was a novel idea when the program began, but survival has impressed upon us the importance of selling our program to potential candidates and school districts that employ our candidates. Marketing costs in dollars and staff time are substantial. Currently, we are allocating two thousand dollars each month to market *Accelerate Online/OPTIONS* using the following venues: career conferences, professional association conference booths, newspaper ads, state level educational administrator journal ads, alumni magazine ads, and Google adword searches. The return on this investment is evident given the increased number of applicants across the years of program implementation. Third, the progression of individuals through the stages of “applied” to “placed” to “certified” to “retained” differs for each person. We consider the optimal time to completion from becoming a candidate to completing certification to be 18 months. Yet circumstances have extended the program length for some candidates by a year or more, but we have learned to be flexible in meeting changing personal circumstances of our teaching candidates. Finally, we have employed a variety of simple communication techniques to determine the teaching status of former candidates (i.e., conducting web searches, calling the cell phone number of the former candidate, calling school district and school that last employed the candidate, contacting former university supervisor, calling relatives). Using these

processes, we have been able to reach 63 of the 64 individuals who have been certified by our program and determined whether they are continuing to teach.

As we implement the *Accelerate Online/OPTIONS* teacher certification program we are continually realizing nuances that can be addressed by developing additional eLearning tools to enhance communications that in turn, increase both effectiveness and efficiency of all components of our program.

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***School & Classroom Environment***

- Time Management
- Discipline Management Techniques

***Designing Instruction I***

- Instructional Planning \*
- Performance Objectives \*
- Instructional Strategies \*
- Accommodating Student Diversity in the Classroom
- Adolescent and Learner Development
- Diagnosing Learners for Instructional Delivery
- Communication Skills Part I & II

***Technology Applications I***

- eCommunication Tools and Applications \*
- Basic Productivity Tools
- Online Resource Applications

***Promoting Student Learning***

- Inductive Instructional Delivery Strategies
- Deductive Instructional Delivery Strategies

***Professional Roles & Responsibilities***

- Code of Ethics for Educators
- Responsibilities to Educational Partners

***Designing Instruction II***

- Constructing Tests and Program Assessment
- Multiple Choice Item Construction \*
- True False Item Construction \*
- Matching Item Construction \*
- Essay Item Construction \*

***Technology Applications II***

- TrackStar I: Finding Online Lessons
- TrackStar II: Preplanning an Online Lessons\*
- TrackStar III: Developing an Online Lessons\*
- Spreadsheets and Databases in the Classroom

***Professional Roles & Responsibilities II***

- Professional Growth and Continuing Education
- Educational Philosophy – Approaches to Teaching

***History & Nature of Science***

- History and Nature of Science
- How Processes and Principles of Science Influence Decisions
- Unifying Concepts that are Common to all Sciences
- Safety Plan for Classroom and Science Laboratory

***Mathematics Instruction & Assessment***

- Mathematical Perspectives
- Mathematical Processes
- Mathematical Assessment
- Mathematical Learning and Instruction

**Figure 1. Eight Clusters Containing Required Online Modules with Two Additional Clusters Containing Modules Specific to Science and Mathematics Certification Areas**

\*includes Artifact submissions

Table 1. Status of Year 1 Candidates

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Status	<u>Candidate Degree</u>			Total
	<u>PhD/MD</u>	<u>MS</u>	<u>BS</u>	
Applicants	13	3	10	26
Admitted	3	2	5	10
Placed	3	2	5	10
Certified	2	2	4	8
Retained	2	1	4	7

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Table 2. Status of Year 2 Candidates

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Status	Candidate Degree			Total
	<u>PhD/MD</u>	<u>MS</u>	<u>BS</u>	
Applicants	1	3	18	22
Admitted	1	3	16	20
Placed	1	2	16	19
Certified	1	2	16	19
Retained	1	1	12	14

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Table 3. Status of Year 3 Candidates

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Status	Candidate Degree			Total
	<u>PhD/MD</u>	<u>MS</u>	<u>BS</u>	
Applicants	13	6	75	94
Admitted	8	4	41	53
Placed	5	4	41	50
Certified	4	2	31	37
Retained	4	2	27	33

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Table 4. Candidate Success Ratios across Years of Program

Year 1	Numerator	Denominator	Success Ratio
Candidates Placed/Total Candidates	10	10	1.00
Teachers Certified/ Total Candidates	8	10	.80
Teachers Retained/ Teachers Certified	7	8	.88
<b>Year 2</b>			
Candidates Placed/Total Candidates	19	20	.95
Teachers Certified/ Total Candidates	19	20	.90
Teachers Retained/ Teachers Certified	14	19	.74
<b>Year 3</b>			
Candidates Placed/Total Candidates	50	53	.94
Teachers Certified/ Total Candidates	37	53	.70
Teachers Retained/ Teachers Certified	33	37	.89
<b>Years 1-3 Cumulative Values</b>			
Candidates Placed/Total Candidates	79	83	.95
Teachers Certified/ Total Candidates	64	83	.77
Teachers Retained/ Teachers Certified	54	64	.84