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TOPIC: IMPLEMENTATION BENCHMARKS

Implementation Benchmarks for Assessing
an Alternative Certification Program

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Abstract: The *Accelerate Online/OPTIONS* alternative certification program provides those possessing a degree an option leading to certification 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 five years, five benchmark ratios were established and calculated each year as formative assessment markers. These ratios are: Applications/Inquiries; Candidates/Applications; Field Placements/Candidates; Teachers Certified/Candidates; and Teachers Retained/Teachers Certified]. These benchmarks have provided informative quantitative markers for annually assessing protocols that were developed and applied in implementing this program.

Perspectives

Accounts of local school districts and state departments of education experiencing teacher shortages have long appeared (Stoddart & Floden,1995) and continue to appear in professional journals (Budig, 2006; Guarino, Santibanez, & Daley, 2006), daily newspapers (Chaker, 2006), and the evening news offered by broadcast networks. To illustrate, a university news service report and a Houston Chronicle article have noted that approximately 37,000 Texas teachers leave the classroom each year and an additional 5,000 teachers are needed annually to meet increasing student enrollments through 2015 (University of North Texas, 2005; "Teacher Recruitment," 2007). Yet others note the United States does not have a shortage of teachers because more teachers are prepared than are needed each year, although shortages in specific subject areas (i.e. mathematics, science, and special education) and geographic locations (i.e., urban and rural school districts) are common occurrences (Follo, Hoerr, & Vorheis-Sargent, 2002; Hill & Hirshberg, 2006; Zhao, 2005). 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 purpose is 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 who exhibit "soft attributes" of high achievement orientation, accepting responsibility, demonstrating critical thinking, being organized, being motivated, being respectful of others, and supporting the goals of the organization (Allen, 2003; National Council on Teacher Quality [NCTQ], n.d.). A second purpose is 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. This approach relies on the experience, expertise, and academic qualifications of an individual with less rigid admission requirements (National Research Council [NRC], 2000; USDE, 2002) in lieu of traditional course work in the field of education (Ludwig, Bacevich, Wayne, Hale, & Uekawa, 2007; USDE, 2006).

Accelerate Online/OPTIONS is an alternative certification program developed to address the purposes of the Transition To Teach program. This paper begins with a brief theoretical framework for alternative certification programs, and then provides a description of our online alternative certification program. The paper continues by providing research questions, the methods used to obtain data to address these questions, and concludes with our results and conclusions drawn from the analysis of these data.

Theoretical Framework

The underlying theory of teacher learning is the situative or socio-cultural perspective of learning (Zhao, 2005). Becoming teachers from this perspective of learning involves interacting with others in their social environment where they acquire new knowledge, skills, language, values and dispositions of the social group. Through these cultural resources, the aspiring teaching candidate achieves membership in the social group (Vasquez, 2006). Briefly stated, the situative perspective has evolved from investigating community context issues such as cultural artifacts and language examined in anthropology and sociology (Pellegrino, Chudowsky, & Glaser, 2001).   The implication for learning to become a teacher is that, the teacher's role is socially constructed rather than determined primarily by ideographic variables such as: age, race, gender, class and educational attainment (Zhao, 2005).

The situative perspective harkens back to John Dewey's view of 'learn by doing' and Lev Vegotsky's 'Zone of Proximal Development' that emphasize the importance of communication in the learning process (Vasquez, 2006). Applying the situative perspective as the theoretical underpinning for preparing a teacher supports the important role that early field experiences, student teaching and internships play in preparing teachers. These components occur in viable teacher preparation programs whether offered as alternative certification programs or college-based programs and provide support to our notion that the single most important component of a teacher's development is the final field experience, whether that is student teaching or an internship. This assertion is based on our experiences and observations in preparing teachers over 35 years and perception

data gathered from teachers who completed teacher preparation during this time (Denton, 1979; Denton, Tsai, & Chevrette, 1987).

Program Description

This program was established initially to provide a flexible alternative certification program for life science, physical science, mathematics and expanded to include social studies and English language arts (grades 8-12); it 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 has provided a talent pool of candidates with strong academic backgrounds.

The curricular elements of *Accelerate Online/OPTIONS* consist of an On-line curriculum, an early field experience and a year-long internship. The development of these program components have been influenced by the situative learning perspective (Vasquez, 2006; Zhao, 2005) in providing the candidate with knowledge, skills, and dispositions identified as necessary for a beginning teacher.

Online Curriculum

We applied substantial effort in developing, and field-testing the 41 modules presented in Table 1. To begin the process, experienced teacher educator textbook authors were recruited to author the modules and were provided resources that included: a recommended content framework of knowledge and skill standards for teachers, a listing of design features for a module, examples of a word processed version and HTML version of a module. In addition, an agreement was provided indicating the payment and time for delivery of the text. Once the text for a module was submitted, project staff converted the text into a multi-media module. The HTML version of the module then underwent at least three reviews including pilot implementations before the module was released for candidates to complete. The development and field testing of the 41 modules required nearly 24 months to complete, although 31 modules became operational during year 1.

The modules were developed to include the following design features.

- The intended length of an on-line module is one (1) hour.
- Extensive use of graphics and video segments are recommended to be incorporated in each module.

- Graphical User Interface (GUI) Navigational resources should be placed on each webpage.
- Module directions should be provided when candidate interaction (active responses/performances) to module queries/activities are expected and immediate feedback to performances should be provided.
- Each module should provide: objective(s), presentation of information, "try this" activities with feedback, post-assessments, and directions for developing instructional materials (as appropriate).
- Each module also should provide: a framework of knowledge, dispositions, and performances and glossary of related terms for the standards being addressed in the module.

Recommended content frameworks provided to the module authors were drawn from state and national educational standards, i.e., State Board of Educator Certification Pedagogy and Professional Responsibilities Standards and Science Standards, (2002); International Society for Technology in Education, (2000); National Science Education Standards, (National Research Council, 1996); and the Interstate New Teacher Assessment and Support Consortium (Mitchell, Robinson, Plake, & Knowles, 2001).

Table 1. **Accelerate Online/OPTIONS Online Modules**

I. School & Classroom Environment	1. Time Management
	2. Discipline Management Techniques and Code of Class Conduct
II. Designing Instruction I	3. Instructional Planning
	4. Performance Objectives
	5. Instructional Strategies
	6. Accommodating Student Diversity in the Classroom
	7. Adolescent and Learner Development
	8. Diagnosing Learners for Instructional Delivery
	9. Communication Skills Part I & II
III. Technology Applications I	10. eCommunication Tools and Applications
	11. Basic Productivity Tools
	12. Online Resource Applications
IV. Promoting Student Learning	13. Inductive (inquiry) Instructional Delivery
	14. Deductive Instructional Delivery Strategies

V. Professional Roles & Responsibilities I	15. Code of Ethics for Educators
	16. Responsibilities to Educational Partners
VI. History & Nature of Science	17. History and Nature of Science
	18. How Processes and Principles of Science Influence Decisions
	19. Unifying Concepts that are Common to all Sciences
	20. Safety Plan for Classroom and Science Laboratory
VII. Mathematics Instruction and Assessment	21. Mathematical Perspectives
	22. Mathematical Processes
	23. Mathematical Assessment
	24. Mathematical Learning and Instruction
VIII. Designing Instruction II	25. Constructing Tests and Program Assessment
	26. Multiple Choice Item Construction
	27. True False Item Construction
	28. Matching Item Construction
	29. Essay Item Construction
IX. Technology Applications II	30. TrackStar I: Finding Online Modules
	31. TrackStar II: Preplanning an Online Module
	32. TrackStar III: Developing an Online Module
	33. Spreadsheets and Databases in the Classroom
X. Professional Roles & Responsibilities II	34. Professional Growth and Continuing Education
	35. Educational Philosophy - Approaches to Teaching
XI. English Language Arts & Reading	36. Integrated Language Arts: the Study of English through Reading Skills for Diverse Learners
	37. Oral Communications, Nonliterary and Media Literature in English/Language Arts
	38. Teaching Writing Skills in English/Language Arts
XII. History & Social Studies	39. Introduction to Social Studies Teaching
	40. Integration of Social Science Disciplines
	41. Reading Comprehension Across the Disciplines

Early field experience

This field component was 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. Culminating activities included: a follow-me-teach activity where the candidate observed a teacher deliver a lesson to one period and then taught a class the same lesson; a few days later, the candidate developed and taught their own lesson to both classes.   The situative perspective of learning (Vasquez, 2006; Zhao, 2005) provided theoretical support for the learning activities in this component of the program.

Final Field Experience

This final component of the program occurred as an academic year paid internship or a semester-long unpaid student teaching experience. Either of these experiences provided the candidate with opportunities to practice multiple pedagogical skills in a classroom environment with support from university supervisors and mentor teachers. Direct teaching experience with feedback and advice for improving specific teaching skills and gaining insights about the school's organizational culture were key elements of this component. As with the early field experience program component, the situative perspective of learning provides a sound theoretical basis to support the structure and schedule of the final field experience. In this experience the emphasis on interacting with others in their social environment in acquiring new knowledge, skills, values and dispositions occur by the teaching candidate (Vasquez, 2006; Zhao, 2005).

Program Implementation

Extensive efforts were undertaken to launch this program because implementation protocols differed from established practices of the college. However, the admission requirements for *Accelerate Online/OPTIONS* were adopted from the undergraduate teacher preparation programs to provide quality assurance to our teacher education colleagues that entry requirements into this program had not been compromised. The following paragraphs briefly describe the processes of: recruiting candidates, monitoring candidate performances across the modules, placing interns in classrooms and then supporting the interns.

Candidate Recruitment

Over the past five years the following recruitment activities were implemented with some approaches being effective while others were not effective in attracting applicants to our program.

1. A Jumbotron ad was placed on the scoreboard screen during a home football game with over 80,000 in attendance.
2. Radio commercials were aired during each football game.
3. Ads were placed in the alumni association quarterly magazine, and a school administrator state journal.
4. Recruitment information was presented at local school district substitute teacher meetings held each month.
5. Newspaper ads were placed in the local newspaper and major city newspaper.
6. Poster placements were completed at strategic locations on campus (close proximity to college advising offices).
7. Direct mailings were made to certification offices of school districts.
8. A program flyer was provided as a screen saver on all student workstations located in university computer facilities.
9. Ads were placed in the campus newspaper targeting particular times in the semester.
10. Vis-à-vis interactions were held with potential applicants at career fairs and booths at professional conferences.
11. Program announcements were provided on a University intranet bulletin board.
12. Links to program descriptions were placed on college homepage.
13. Program announcements were emailed to all undergraduate students.
14. Google search engine "Adwords" and URL advertising were implemented.

Through direct experience, we learned that our initial marketing efforts (items 1-7) were ineffective in drawing applicant inquiries to our program while the latter marketing efforts (items 8 – 14) did succeed in raising awareness to the extent that up to 250 inquiries per month were received following particular events (item 13) in year 5.

Monitoring Candidate Progress

An extensive digital monitoring system, the eEmpowerment Zone (eZone), was developed for this program that includes an on-line registration system with password protection for candidates to access the modules and an underlying management resource that tracks candidate performance for each module. By organizing instructional web-based modules, electronic portfolios, resources and tools into an integrated system, teaching candidates were able to complete the online and field-components of the program while receiving extensive support from university supervisors, mentor teachers, fellow students and program staff.

For the candidates, the management system has served to affirm their program status in terms of completed assignments and module deliverables, and the system returned candidates 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 attended to each candidate's visits to a module, the elapsed time spent examining the contents of the module and whether items requiring a response were completed. Given these data, candidate

progress in completing the modules were reviewed to determine whether individual candidates were progressing satisfactorily in the program, as well as assessing whether modules had potential design flaws given the collective performance of the candidates on particular activities and their overall performance on the module. Iterative adjustments across the modules occurred as formative data were collected and interpreted regarding the instructional effectiveness of the program.

Early field experience postings to ePortfolio

Candidates were instructed to upload completed lesson observations and interview forms to their ePortfolio across the multiple week experience to document their observations and reflections. As noted earlier, these activities were included in the curriculum to provide candidates a gradual induction into the teaching environment while thinking about classroom actions in terms of the principles and concepts presented in the online modules.

Candidate Placement in Final Field Experience

Establishing effective strategies for placing candidates in paid teaching assignments evolved quickly from *denial* (affirming among ourselves that job placement was NOT our primary responsibility during year 1) to *affirmation* (actively marketing all of our candidates to school districts in years 2 - 5). 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 our candidates to school officials in assisting our candidates to obtain internships**.** Approaches employed include:

1. *direct postal mailings and email messages* to school district officials about our available secondary teaching candidates;
2. *personal visits* with Human Resource directors at fall and spring Career Fairs regarding our available teaching candidates;
3. *booths* at the Texas Association of School Administrators/ Texas Association of School Boards annual meetings to inform school administrators and board members about our available candidates;
4. *luncheons* with superintendents and Human Resource professionals to promote teaching candidates participating in the program; and
5. *on-going communications by our Coordinator of Placement* with human resource officials and school administrators regarding our candidates.

In addition, powerful supports in placing our candidates have been the ePortfolios the candidates have developed after beginning their programs. To facilitate reviewing our candidates, an online ePortfolio Center was established for school administrators to search ePortfolios of teaching candidates – by Last Name, or Certification Area, or the candidate's preferred location or regional preference. We have learned that providing secondary school principals and human resource officials access to the candidates' ePortfolios has been a very effective way to market our candidates.

Unfortunately some of our candidates did not locate a teaching position they would accept. An option for these candidates was to complete certification in a non-paid, semester-long student teaching experience. A second option was to delay program completion for a year while continuing to seek a teaching position. Candidates finding themselves in this circumstance have generally elected to complete the program with a student teaching experience. During the past 5 years, 14.7% of our placed candidates have selected the student teaching option.

Candidate Support during Internship

Guidelines and responsibilities for the intern, the university supervisor and the mentor teacher have been provided to each intern and their support team members just prior to the final field experience. These materials and activities reflect successful practices gleaned over time by teacher educators and university supervisors. To illustrate, interns have submitted their instructional plans weekly to their ePortfolio to be reviewed by their supervisors and mentor teachers in preparation for classroom visits by the supervisor. Although six classroom visits across the school year are specified to meet certification expectations, supervisors generally have completed nine or more classroom visits. In addition, a digital learning community was established during the third year of implementation among our supervisors for sharing ideas and digital resources. This learning community arose to address the need to discuss challenges supervisors face in supporting their interns.

Continuing Support after Certification

Once candidates have completed the program and received their teaching certificates, maintaining contact with them has been a continuing challenge. 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, and calling relatives). Applying these techniques enabled us to maintain contact with 75 of 98 teachers certified through our program after five years. Further in an effort to maintain contact, we have provided our former candidates with continued access to the eEmpowerment Zone, their *ePortfolios* and continuing online professional development programming for three years following program completion.

Benchmarks to assess the implementation of our program began to evolve as we continually assessed our efforts in recruiting candidates, monitoring their performances, placing them in internships and supporting them in completing certification requirements. The remainder of this paper examines benchmarks associated with recruitment, internship placement, program completion and teacher retention across five years.

Research Questions

Across five years of program implementation:
1. How does the annual benchmark ratio [Applications/Inquiries] change?
2. How does the annual benchmark ratio [Candidates/Applications] change?
3. How does the annual benchmark ratio [Field Placements/Candidates] change?
4. How does the annual benchmark ratio [Teachers Certified/Candidates] change?
5. How does the annual benchmark ratio [Teachers Retained/Teachers Certified] change?

Methods

Sample

The sample consists of 241 individuals who have provided applications to *Accelerate Online/OPTIONS* across five years. The number of applications/year range from 22 to 94, with the following values recorded: year 1 – 26; year 2 – 22; year 3 – 94; year 4 – 45; and year 5 – 54. Given the nature of the research questions posed: gender, age, teaching fields and level of academic preparation of the applicants are not examined in this study, but have been addressed elsewhere (Denton, et al., 2007).

Data Collection and Data Analysis

Extensive biographic data on applicants were compiled into the eZone database beginning with the submission of an application. Assuming all admission criteria were met, the applicant was accepted into the program as a candidate. The eZone database was developed to include extensive performance data on all candidates related to online instructional module assessments, classroom observations and ePortfolio assessments. Scores from state required teacher certification tests, certification notification and teacher retention data were added to the record of each candidate as the information was received resulting in an eZone record containing more than 300 variables on each candidate that successfully completed the program and continued to teach.

The Statistical Package for the Social Sciences (SPSS, 2004) was used in determining the program implementation benchmarks. The following tabular summaries present data associated with recruitment, successful program entry, program completion and continuing practice as a classroom teacher partitioned by the year the applicant joined the program.

Results

As previously noted, benchmarks to assess the implementation of our program began to evolve as we monitored efforts in recruiting candidates and

continued through supporting them in completing certification requirements. Available data from the beginning and conclusion of the five-year implementation period are truncated for different reasons. Data from inquiries and program applications were not systematically collected during the initial 1.5 years of the program implementation because a sufficient number of applicants applied when the program was launched. Incomplete data are also evident for teachers certified and teachers retained at the end of this period, because year 5 candidates were currently "in-progress" in their yearlong internships when these analyses were conducted.

Research Question 1

Fourteen different marketing efforts have been used to attract candidates to our program since the program began. During the initial 1.5 years of implementation, we placed ads in newspapers, an alumni magazine, and a school administrator state journal; purchased radio advertisement spots during football games; and projected a program brochure on the video–screen scoreboard (Jumbotron) during a football game with over 80,000 in attendance. These efforts were largely unsuccessful in attracting applicants. In addition, when individuals requested information about our program, we asked how they learned about us and rarely were any of these marketing techniques mentioned. Unfortunately, we did not systematically record the number of inquiries and applications received each month during this period.

During the second year of implementation we began to log all inquiries about our program and compare these inquiries with the applications received each month. Then at the beginning of year 4, we began using Google Adwords to market the program. While inquiries did increase during year 4, other marketing techniques as well as Google Adwords were thought to be contributing to the increased inquiries about our program. To refine our data gathering processes, an interest form was added to the program website and anyone requesting information about the program was directed to complete the interest form as the first step in the application process.   Employing these processes, we learned that 46% of the inquiries resulted from web-searches, 14% from email messages sent to all undergraduate students, 10% from word-of-mouth referrals, 5% from career fair presentations, and 4% from academic advisor referrals. The remaining 20% did not indicate the source that led to the inquiry.

These actions have provided data to compute the annual benchmark Applications/Inquiries (A/I) ratios. Table 2 presents a summary of data associated with Research Question 1.

Table 2. Benchmark Ratio: Applications/Inquiries

Year	Applications (A)	Inquiries (I)	Ratio (A/I)
	Annual Frequencies		

1	26	-	-
2	22	327*	-
3	94	794	.12
4	45	1063	.04
5	54	1363	.04

* Total inquiries for year 2 were recorded for 4 months or .33 year

After we began to systematically record program inquiries, we were able to observe that adjustments in marketing techniques did increase the number of inquiries. And in general, applications to the program increased with a noticeable spike occurring in year 3. The resulting A/I benchmark ratio became a constant value during years 4 and 5. A chi-square statistic applied to the frequency values for years 3, 4 and 5 yielded the result, $[X^{2\,(4,\,N=3)} = 6.00, p = .199]$ indicating that the frequencies and resulting ratios were not statistically different. These A/I ratios support the observation that in order to recruit sufficient teaching candidates to reduce noted teacher shortages (Budig, 2006; Guarino, Santibanez, & Daley, 2006, Hull, 2004; Levin, 2006), a large number of "interested" individuals in becoming a teacher is needed to yield sufficient teaching applicants to allay the well-publicized shortages.

Research Question 2

Changing from an applicant to a candidate in this program occurred if the applicant met both academic and personal profile requirements. Academic requirements include the candidate being at least within one year of completing a baccalaureate degree with a cumulative 2.50 GPR, presenting a transcript of 24 semester hours in a specific content specialization and presenting a passing score on a Texas Examination of Educator Standards (TExES) content examination. Personal qualities considered for admission include: conveying a genuine interest for teaching youth during a personal interview with program staff, submitting two letters of support and posting a clear record of no criminal activity from a national background check.

Data associated with the preceding academic and personal admission requirements were gleaned from submitted applications and added to the eZone data base. Determining whether the individual's academic and personal profile data were sufficient to become a candidate was based on this information. The resulting admission decisions have provided data for determining the annual benchmark Candidates/Application (C/A) ratios presented in Table 3.

Table 3. Benchmark Ratio: Candidates/Applicants

| Year | Annual Frequencies | | |
	Candidates (C)	Applications (A)	Ratio (C/A)

1	10	26	.38
2	20	22	.91
3	57	94	.61
4	27	45	.60
5	38	54	.70

The number of candidates accepted into the program increased across years of implementation with a substantial increase occurring during year 3. One reason for the increased number of applications and candidates accepted into the program during year 3 was that a decision was made to discontinue the undergraduate secondary teacher certification program due to high costs and low enrollments. Undergraduate students already committed to secondary education were directed to our program to complete certification.

A chi-square statistic applied to the frequency values in Table 3 yielded the value, $[X^{2\ (16,\ N\ =\ 5)} = 20.00, p =. 22)$ indicating the frequencies and resulting ratios were not statistically different. The average C/A ratio across this period was .63. This value corresponds to the percent of total applicants reported nationally to be eligible to participate in TTT programs (Ludwig, et al., 2007).

The most common reason for non-admission has been that individuals did not complete the application process. Forty-nine applicants failed 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, obtaining two support letters, the background check of criminal activity, 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 (NRC 2000b; USDE, 2002). Yet these admission procedures have been retained to assure employing school districts the applicant has at least been carefully screened to teach secondary students.

Thirty-three applicants failed to be admitted because they did not attain the criterion score on the TExES content test, and 5 applicants with low grade point ratios were not admitted. Less pronounced but meaningful is that 2 applicants were not admitted because personal views and expectations about teaching expressed during their interviews were quite incongruent with actual classroom environments. The soft attributes of successful teachers cited previously (Allen, 2003; NCTQ, n.d.) have been integrated into the interview process and assessed on each applicant.

Research Question 3

As placement protocols evolved, we actively communicated the qualities of our candidates to school officials. Most persuasive in getting our candidates placed has been the on-going communications by our Coordinator of Placement with human resource officials and school administrators. Placement data were systematically included in the eZone database and used to compute the annual benchmark Field Placements/Candidates (FP/C) ratios provided in Table 4.

Table 4. Benchmark Ratio: Field Placements/Candidates

| Year | Annual Frequencies | | |
	Field Placements (FP)	Candidates (C)	Ratio (FP/C)
1	10	10	1.0
2	19	20	.95
3	53	57	.93
4	25	27	.93
5	35	38	.92

The annual FP/C ratios have remained consistently high across five years with an average FP/C ratio of .93. A chi-square statistic applied to the frequency values in Table 4 yielded the value, $[X^{2\ (16,\ N\ =\ 5)} = 20.00, p = .22]$ indicating the frequencies and resulting ratios were not statistically different.

While the numerical values of the FP/C ratios are high, and these values do align with the situative perspective for preparing teachers (Vasquez, 2006; Zhao, 2005) as well as the importance we have placed on the field experiences, our goal has been that all candidates would be placed in final field experiences in a timely fashion especially since the student teaching option was provided. Unfortunately personal circumstances have increased the time to completion for some candidates while others have resigned from the program.

Research Question 4

The final steps in attaining certification as a secondary teacher assuming a successful final field experience are that the candidate passes the TExES Pedagogy and Professional Responsibilities (grades 8-12) examination and submits an application to program staff that verifies the candidate's successful completion of certification requirements. At present, every Accelerate *Online/OPTIONS* intern and student teacher that has completed the TExES Pedagogy and Professional Responsibilities examination has attained the criterion score.

For this research question, scores from the TExES Pedagogy and Professional Responsibilities test and certification notification were added to the eZone database and used to compute the annual benchmark Teachers Certified/Candidates (TC/C) ratios provided in Table 5.

Table 5. Benchmark Ratio: Teachers Certified /Candidates

| | Annual Frequencies | | |
Year	Teachers Certified (TC)	Candidates (C)	Ratio (TC/C)
1	8	10	.80
2	19	20	.95
3	46	57	.81
4	25	27	.93
5	NA*	38	-

*Year 5 values are Not Available because candidates are in their final field experience

Comparing the number of candidates and teachers certified across the initial four years of implementation, we note 16 candidates did not complete certification requirements. Exploring the status of the 16 candidates that have not completed certification, we found that 4 candidates remain active in the program; 5 candidates withdrew from the program before beginning their final field experience and 7 candidates resigned from the program during their internship.

The annual TC/C ratios have ranged from .80 to .95 across four years with an average value of .86. The average TC/C ratio compares favorably with the percentage of teachers (84%) teaching during their year they completed their certification in one of the TTT programs funded by the U.S. Department of Education (Ludwig, et al., 2007). A chi-square statistic applied to the frequency values in Table 5 yielded the value, $[X^{2\,(9,\ N=4)} = 12.00, p = .213]$ indicating the frequencies and resulting ratios were not statistically different.

These TC/C ratios support our view that our online curriculum and final field experience support system 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, (i.e., 2 in year 1, and 5 in year 3). A hypothesis to explain the resignations that is supported by exit interview responses from resigning interns 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 led to refinements during the application process that address personal views and expectations about teaching that are incongruent with actual classroom environments, as well as coaching university supervisors and mentor teachers about allaying the unmet needs of the candidates during this crucial part of their certification program. Further, these refinements in the application process are supported by the theoretical underpinning for this program presented by Vasquez (2006) and Zhao (2005).

Research Question 5

For this research question, teacher retention data were added to the eZone data base and used to compute the annual benchmark Teachers Retained/ Teachers Certified (TR/TC) ratios provided in Table 6.

Table 6. Benchmark Ratio: Teachers Retained /Teachers Certified

Year	Annual Frequencies		Ratio (TR/TC)
	Teachers Retained (TR)	Teachers Certified (TC)	
1	8	8	1.00
2	18	19	.95
3	39	46	.85
4	22	25	.88
5	-	NA*	-

*Year 5 values are Not Available because these candidates have not completed certification.

A chi-square statistic applied to the frequency values in Table 6 yielded the value, $[X^{2\ (9,\ N\ =\ 4)} = 12.00, p = .213]$ indicating the frequencies and resulting ratios were not statistically different. Teacher retention for this analysis has been defined by whether these teachers continued teaching a second year following receipt of their teacher certification. The average TR/TC ratio of .89 across the implementation of this program compares favorably with retention value of .76 for second year teachers reported by Ingersoll (2003).

Conclusions

There are several lessons we have learned across five years of implementing the *Accelerate Online/OPTIONS* program. First with the curriculum being provided online, this 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 in sustaining the program. The A/I benchmarks and the related data gathering protocols we have applied on Inquiries about the program do support the benefits of the program being offered online. The C/A benchmark for year 1 indicated that our recruitment strategies were not targeting a sufficient number of potential candidates that would commit to actively pursue teacher certification. Early recruitment approaches attracted applicants with little commitment to actually becoming classroom teachers. Our response was to restrict the applicant pool to increase the C/A ratio in year 2, but in the process we reduced the number of applicants. Gradually, our recruitment efforts have identified promising techniques, such as, college career fair booths, Google Ad word marketing, direct personal contact with college advisors and repeated follow-up with individuals who have increased interest in becoming a teacher. These techniques are yielding the number of applicants needed to sustain the program without external funding.

Second, the idea of aggressively 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 and given the results from our analysis, (i.e., average A/I benchmark of .07), we need 100 inquiries to produce 7 applicants. Of these 7 applicants we can expect that 4 will become candidates if we apply the average C/A benchmark of .63. Thus, if 40 candidates are needed to sustain the program, sufficient marketing activities must be implemented to yield at least 1,000 inquiries.

Third, the progress of yearly cohorts of individuals from "candidates" to "field placements" to "teachers certified" to "teachers retained" are addressed by the respective benchmarks: C/A, FP/C, TC/C and TR/TC. We consider the optimal time to completion from becoming a candidate to completing certification to be 18 months. Yet personal circumstances have extended the program length for a few candidates to 30 months or more. We have learned to be flexible in meeting the changing personal circumstances of individual teaching candidates in order to retain them in the program.

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 determined the benchmark TR/TC on an annual basis, and are pleased that we have maintained contact with 75% of the individuals that have been certified by our program over the past five years. As a cautionary note, we realize that while retention in teaching positions by former candidates is generally accepted as a measure of a teacher preparation program's quality, a myriad of personal factors also affect teacher decisions about remaining in the classroom. Thus, we recommend that evaluators of teacher certification programs place modest decision weight on teacher retention ratios beyond two years of service.

As we implemented the *Accelerate Online/OPTIONS* teacher certification program we found that we continually needed different data to inform our program efforts and soon realized our information needs could be met by developing additional eLearning tools. These data producing protocols led to the implementation benchmarks that we have examined in this study. It is our belief these benchmarks have helped us increase both the effectiveness and efficiency of our program.

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