PROJECT DELTA

DEVELOPING ENGLISH LANGUAGE AND LITERACY THROUGH TEACHER ACHIEVEMENT

2007-2012
UNIVERSITY OF FLORIDA

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OELA Presentation, November 30, 2010
Context

- Nationally, most teachers are inadequately prepared to teach ELLs (Gándara et al., 2005)
  - Karabenick and Noda (2004) report that teachers lack basic foundational knowledge about ELL issues, despite the fact that 88% teach ELLs
- Florida has had requirements to prepare mainstream teachers of ELLs through inservice since 1990, and through preservice since 2001
ELLs in Florida

- FDOE reported 231,801 ELLs in 2009-2010 (8.8% of total enrollment).

- Additionally, FDOE reported 204,287 former ELLs in 2009-2010 (7.7% of total enrollment).

- Most ELLs (66%) are enrolled in the elementary grades, including 40% enrolled in grades K-2.

Teacher education programs have prepared candidates through an “infused” ESOL endorsement program since 2001

- Minimum of 2 ESOL stand-alone courses taught by ESOL faculty
- ESOL Performance Standards must be addressed and assessed in the program
- 45 hours of Professional Development required for instructors teaching “ESOL-infused” courses
- Field experience requirement
Project DELTA

Developing English Language and Literacy through Teacher Achievement

- Project DELTA is a post-training assessment project designed to examine the impact of an ESOL-infused elementary education program on ELL achievement through teacher practice.
  - 5-year (2007-2012) mixed-methods study
  - Results intended to improve elementary ESOL-infused teacher preparation program
ESOL-Infused Teacher Preparation Program at UF

- Two-course ESOL-infused elementary teacher preparation program approved since 2001; satisfies 300-hour ESOL endorsement requirement

- Course I  *TSL 3520: Foundations of Language and Culture in the Elementary Classroom*

- Course II  *TSL 5142: Curriculum, Methods, and Assessment*

- Infusion of ESOL Performance Standards across key ‘general education’ courses
Project DELTA
Design

- Surveys
- Interviews
- Case Studies (Focus Teachers)
- Education Data Warehouse (EDW)
Survey

- **Purpose:** Assess teachers’ perceptions of their own preparedness and effectiveness in working with ELLs

- **Research Questions:**
  1. In what instructional areas do program graduates feel most and least **prepared** to teach ELLs?
  2. In what instructional areas do program graduates feel most and least **effective** in teaching ELLs?
  3. What **field experiences** in the program were most helpful in preparing graduates to teach ELLs?
  4. Are there significant differences in graduates’ responses based on **teacher characteristics**?
Survey
Data Collection & Analysis

- Survey mailed to all program graduates (2001-2007) in spring 2008 and fall 2009 (n=85 viable responses)

- Data analysis
  - Descriptive statistics (RQ 1, 2, 3)
  - Measures of association (RQ 1, 2, 4)
  - Multiple regression (RQ 4)
Survey Results

- Teachers’ ratings of efficacy and preparedness were highly correlated in all areas
  
  - Graduates reported feeling *more effective than prepared* to work with ELLs
  
  - Graduates reported feeling *most* effective and *most* prepared in the use of instructional strategies related to teaching content and reading comprehension
  
  - Graduates reported feeling *least* effective and *least* prepared in areas related to language (students’ native language, English grammar and pronunciation)
Survey Results

- Field placement options considered most helpful to teacher graduates:
  - Observing in ESOL classrooms
  - Direct teaching (whole class, small group) of ESOL students in practicum or internship
  - Tutoring ESOL students (individuals or pairs)
Survey Results

- Graduates with intermediate or higher proficiency in a language other than English (LOTE) felt more prepared to teach ELLs.

- Graduates with LOTE and graduates working in Title I schools felt more effective in connecting to ELLs’ cultural and linguistic backgrounds.
INTERVIEWS
Interviews

Purpose: To understand how the program has (or has not) prepared graduates to work with ELLs

Research questions
- What aspects of or experiences in the program do graduates indicate were most helpful in preparing them to work with ELLs?
- What role does LOTE play in teaching ELLs?
- How do graduates describe their practices with ELLs?
Interviews

Data Collection and Analysis

- Audio-recorded telephone interviews
  20-60 minutes each (n=19)

- Individual interviews with teachers addressed:
  - How the program prepared them to teach ELLs
  - Experiences learning another language or living in another country, interaction with diverse people
  - Recommendations for improving the program

- Thematic analysis
Interview Results

- Overall positive evaluation of the program
  - Emphasis on central role of field experiences in building confidence and developing competence in teaching ELLs

- Recommendations for improvement
  - expand field experiences
  - ensure elementary field placements
  - connect theory and practice
  - provide access to teaching resources

- LOTE proficiency and/or cross-cultural experiences help teachers understand processes of learning a second language and facilitate instruction
CASE STUDIES
Case Studies
Teacher Sites
Case Studies

Purpose: To understand how graduates facilitate instruction with ELLs in diverse elementary mainstream classrooms

Research questions:
- How do graduates specifically address ELLs’ linguistic and cultural differences in Math and Reading?
- What factors influence their pedagogical choices?
Case Studies

Data Collection and Analysis
EDUCATION DATA WAREHOUSE (EDW)
Education Data Warehouse (EDW)

- Only a handful of states have statewide datasets matching students to teachers for any length of time (NC, WA, NY)
- Florida Department of Education has developed the EDW as a large dataset related to schools in Florida

http://edwapp.doe.state.fl.us/home.aspx
EDW Database
### Student Data Elements

**Business Subjects**

- **Student**
  - Student Demographic
  - Active Student
  - Student Course
  - Student Test
  - Student Employment
  - Financial Assistance
  - Student Award

**Educational Curriculum**

- Educational Curriculum
- Course

**Educational Institution**

- Educational Institution
- District
- Educational Facility

**Educational Staff**

- Employee Demographic
- Certified Staff
- Educational Staff
- Employee Payroll
Accessing Student Data

The Florida Comprehensive Assessment Test (FCAT) was first administered in the Spring of 1996. The FCAT was originally developed to test Reading (in grades 4, 8 and 10) and Mathematics (in grades 5, 8 and 10). The tests measured student performance on selected benchmarks, as defined by the Sunshine State Standards (SSS). Student proficiency was reported for each subject using a scale score that ranged from 100 - 500, each scale being separately computed for each grade level. Progress over time was reported as changes in the performance of each grade level group - i.e., this year's fourth grade students were compared to last year's fourth graders to see if the average score changed. Based on the scale score, each student's performance fit into one of five levels, with Level 5 indicating the highest achievement. In 2001 a developmental scale (0 - 3500) was built for the FCAT to allow conversion of traditional scale scores (100 - 500) to developmental (vertical) scale scores which can be used to track student progress across grade levels (i.e., learning gains). The FCAT writing component, formally known as Florida Writing, has been administered in grades 4, 8 and 10 since 1993. The FCAT Reading and Mathematics Norm-Referenced Test (NRT) was administered beginning with the 1999-2000 administration. The NRT portion of the FCAT is in a form of the Stanford 9 published by the Psychological Corporation. The Reading scores are based on the Reading Comprehension subtest, and the Mathematics scores are based on the Problem Solving subtest. All students in Grades 3-10 take the NRT. FCAT data is available for the following grade levels and subject areas: - 1997-98 and 1998-99 SSS Reading and Writing in grades 4, 8 and 10. SSS Math in grades 5, 8, and 10. - 1999-00 and 2000-01 SSS and NRT Reading and Math in grades 3-10. SSS Writing in grades 4, 8 and 10. - 2001-02 SSS and NRT Reading and Math in grades 3-10. SSS Writing in grades 4, 8 and 10. - 2002-03 SSS and NRT Reading and Math in grades 3-10. SSS Science in grades 5, 8 and 10. SSS Writing in grades 4, 8 and 10. The SAT uses a scale of 200 - 800 and the ACT uses a scale of 1 - 36.
Accessing ELL Achievement Data

[Image of the Florida Department of Education K-20 Education Data Warehouse website]

- Home ➔ Business Subjects & Facets ➔ Business Subject ➔ Business Facet ➔ Business View

**Business View description**

Data elements list

Name: LEP_EVALUATION_TEST_SUBJECT_V

**Data elements list**

- ENROLLMENT_ID
- INSTITUTION_ID
- K20_EDW_ID
- LEP_TEST_DATE
- LEP_TEST_SCORE
- LEP_TEST_SUBJECT_CD
- TEST_ID
Teacher (Staff) Data Elements

K-20 Education Data Warehouse

Business Facet description

Name: Educational Staff

Business Views list

- COURSE_OFFERING_V
- EMPLOYMENT_V
- EXPERIENCE_V
- OFFER_TECH_DELIVERY_METHOD_V
- TEACHING_ACTIVITY_V
- WORK_ACTIVITY_INSTITUTION_V
- WORK_ACTIVITY_V
EDW

Data Request Process

- Elements must be reviewed for relevance to the project; packet for application / privacy limitations / availability limitations in the dataset

- Identified teacher-graduates from UF (student services) and sent identifiers to FL DOE

- Lengthy process (about one year); all elements received September 23, 2009
  - 75 variables from both sets; 3.3 million students (2002-2007) and ~70,000 teachers
Project DELTA
EDW Research Questions

- Do different UF teacher preparation paths make a significant difference in ELL student achievement?
- Is there a significant difference in aggregate student performance between Florida teachers prepared at UF and those from a non-UF institution?
- How is teacher effectiveness mediated by contextual variables?
Data analysis has been subcontracted with the Maternal and Child Health Education Research Data Center.

- (MCHERDC) has capacity to work with large datasets and within privacy guidelines [http://mch.peds.ufl.edu/](http://mch.peds.ufl.edu/)

To date, research question #1 has been analyzed:

*Do different UF teacher preparation paths make a significant difference in ELL student achievement?*
EDW
Data Analysis
Research Question 1

- Preliminary data cleansing for analysis
- Stepwise process of refining the set of records for analysis
EDW
Refinement Process

**STUDENT SET**
- Who is “ELL”? (LY, LN, LZ, LF)
- Subsets:
  - Grade level retention
  - Special education
- Achievement data limitations
  - Language proficiency
  - Exit (ESOL) data
  - FCAT (Reading/Math)

**TEACHER SET**
- UF teachers in the data set (unique ID)
- Who is “primary teacher”?
- Other-teacher support
EDW
Final Sample for Analysis

- Non-ESE, non-retained ELLs, not enrolled in ESOL course, in grades 3, 4, and 5 with complete FCAT and enrollment data matched to

  - Individual non-UF teachers
    (n= 71,194 students; 23,985 teachers)

  - Individual UF teachers
    (n=1,100 students; 358 teachers)
Research Question: Do different UF teacher preparation paths make a significant difference in ELL student achievement?
UF Teaching Pathways

UF teacher preparation pathway codes (n=12) were aggregated into four groups:

- A [5 Year ESOL Endorsement]
- B [5 Year ESE + ESOL Endorsement]
- C [5 Year No ESOL Endorsement]
- D [4 year Bachelor’s degree]
Table 1. Student Means on Math and Reading FCAT Scores by the Four UF Teacher Preparation Paths

<table>
<thead>
<tr>
<th>UF Teacher Preparation Paths</th>
<th>Student Mean FCAT Score</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Math</td>
<td>Reading</td>
<td></td>
</tr>
<tr>
<td>A: 5 Year ESOL</td>
<td>306.42*</td>
<td>282.64*</td>
<td></td>
</tr>
<tr>
<td>B: 5 Year ESOL + ESE</td>
<td>310.42</td>
<td>294.52</td>
<td></td>
</tr>
<tr>
<td>C: 5 Year No ESOL</td>
<td>291.53*</td>
<td>270.64*</td>
<td></td>
</tr>
<tr>
<td>D: 4 Year Bachelor’s</td>
<td>307.26</td>
<td>278.82</td>
<td></td>
</tr>
</tbody>
</table>

Note. Asterisk indicates statistically significant difference between groups $(p<.05)$
PROJECT DELTA
PRELIMINARY FINDINGS
AND DIRECTIONS
Project DELTA
Goals and Findings

Goal 1 – to understand the relationship between the ESOL-infused Elementary ProTeach program and the academic achievement of ELLs

- Finding: The 5-year ESOL-infused program (leading to an ESOL endorsement) is positively associated with upper elementary ELL student achievement in Math and Reading as measured by the FCAT

- Finding: Graduates perceived preservice field experiences that provided direct contact with ELLs as important in preparing them to work with ELLs
Implications

- Mainstream teacher preparation for ELLs needs to be comprehensive, standards-driven, and integrated throughout the program (Brisk, 2008; de Jong & Harper, 2005; Lucas, 2010; Lucas & Grinberg, 2008; Tellez & Waxman, 2008)

- Field experiences that are well-structured, relevant to candidate’s future classroom settings, and involve direct interaction with ELLs serve to bridge the theory-to-practice gap (Boyd et al., 2008; Carparo et al., 2010; Pamela, Hamilton, Loeb, & Wykoff, 2008)
Implications

Teacher preparation consists of multiple and varied components that need to be explored for relevance and impact, rather than simply categorized as “traditional” and “alternative” (Boyd, 2006; Boyd et al., 2008)
Project DELTA
Goals and Findings

- Goal 2 – to understand the variables that influence teachers’ implementation of effective practices and the achievement of ELLs in Florida elementary classrooms

  - Finding: Teacher (LOTE, ESE certification) and school (Title I) characteristics can mediate teachers’ effectiveness and preparedness to teach ELLs

  - Finding: ELL student characteristics such as number and English proficiency level appear to mediate the degree to which teachers implement instruction specific to ELLs’ needs
Implications

- Research that links teachers with students requires a detailed understanding of who teachers of ELLs are (Lucas & Grinberg, 2008; Reeves, 2009; Zeichner & Melnick, 1996).

- More detailed information is needed on ELL characteristics in mainstream classrooms.

- If LOTE facilitates teacher engagement with effective practices, there is a need to build a stronger bilingual teaching force (Barkhuizen & Feryok, 2006; Faltis, 1999; Karathanos, 2009; Youngs & Youngs, 2001).
Goal 3 – to use findings obtained from the study to modify and enhance the UF ESOL-infused teacher preparation program and to inform teacher educators, policymakers, and educational administrators about study findings at state and national levels

- Action: Expand and enhance field experiences and restructure related course work
Thank you!

For references and more information, contact
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