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Chapter 16
Adopt-an-Apprentice Teacher:
Re-Inventing Early Field Experiences

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ABSTRACT

The goal of this chapter was to explore the impact of a field-centric, grade-band, and subject-area specific field experience model that is linked to corresponding coursework on novice teacher candidates' conceptions of what it means to be a teacher. Grounded in the work of scholars such as Dewey, Piaget, and Vygotsky, this study explores three questions: What aspects of the Adopt-an-Apprentice program do teacher candidates view as beneficial to their understanding of the profession and their development as teachers? What benefits, if any, do classroom teachers derive from hosting teacher candidates in the Adopt-an-Apprentice program? What is the impact of grade band/subject-area field experiences on teacher candidates' conceptions of being a teacher? Using quantitative and qualitative surveys, the study illustrates how coursework linked to authentic application in clinical settings empowered novice teacher candidates to understand and engage content, pedagogy, and standards.

INTRODUCTION

Teacher education has evolved in the past twenty years to attempt to better address the complexities of contemporary classrooms by finding better ways to prepare teacher candidates to meet the needs of PK-12 students. Ball (2000) contended that fragmentation between theory and practice existed in teacher preparation and called for the integration of knowledge and practice to help candidates develop as ef-

fective teachers. Effective teacher education programs will need to continue to connect the ideas and strategies taught in college classrooms with the real-world context of PK-12 classrooms. The goal of this study was to explore the impact of a field-centric, grade-band and subject-area specific field experience model—linked to corresponding coursework—on novice teacher candidates' conceptions of what it means to be a teacher. To address varying definitions such as *clinical experiences*, *internships*, and *field experiences*, in this chapter "field experiences" or "early field experiences" refer to experiences occurring in school settings *prior to* the now-common methods semester that typically precedes student teaching.

BACKGROUND

The means by which teacher candidates learn to teach has been the subject of exploration by numerous researchers in the past three decades. While research from the 1980s and 1990s demonstrated that teacher candidates spent most of their time in campus classrooms absorbing knowledge *about* teaching, with a single, final semester of *applied* teaching (Huling, 1998), research by the late 1990s spotlighted successful programs that featured systematic, long-term collaboration (Wideen, Mayer-Smith, & Moon, 1998).

Since then, calls for improved teacher preparation through early, frequent, varied, and purposeful field experiences in authentic school settings have multiplied (Boyd, Grossman, Lankford, Loeb, & Wyckoff, 2009; Cochran-Smith & Zeichner, 2005; Coffey, 2010; Zeichner, 2010). Darling-Hammond (2010) has long argued that the clinical side of teacher education is frequently "haphazard" and "dependent on the idiosyncrasies of loosely selected placements with little guidance about what happens in them and little connection to university work" (p. 40). In addition, Zeichner (2010) argued that the lack of meaningful partnership between colleges of education and K-12 schools signified the core problem in teacher education.

Studies have explored various models of candidate learning and teaching during student teaching internships, from advocating smaller changes such as co-teaching (Baeton & Simons, 2016; Heck, 2010), to more explicit work in collaboration (Weiss, Pellegrino, & Brigham, 2017), to a total re-configuration of educator preparation with a focus on the critical role of field experiences (Boyd, Grossman, Lankford, Loeb, & Wyckoff, 2009; Darling-Hammond, 2006; Meyer, 2016). In particular, a Standard authored by the Council for the Accreditation of Educator Preparation (CAEP) advocates the shared, reciprocal role of clinical partnerships, where:

The provider works with partners to design clinical experiences of sufficient depth, breadth, diversity, coherence, and duration to ensure that candidates demonstrate their developing effectiveness and positive impact on all students' learning and development. (Council for the Accreditation of Educator Preparation, 2013, 2.3)

In short, research consistently cites strong partnerships between universities and schools, along with coursework examining teacher practice, as a hallmark of quality education programs (Ball & Forzani, 2011; Cochran-Smith, Villegas, Abrams, Chavez-Moreno, Mills & Stern, 2015; Coffey, 2010; Darling-Hammond, Chung, & Farlow, 2002; Wilson, Floden, & Ferrini-Mundy, 2001).

With these calls for earlier and more frequent field experiences, Wideen et al. (1998) contended that transforming the beliefs of novice teacher candidates is one of the goals of early and extensive field ex-

periences. Researchers argue that student beliefs are well-established (Britzman, 1998; Weinstein, 1990; Wideen, Mayer-Smith, & Moon, 1998) and overly-simplistic (Darling-Hammond, 2006), but amenable to change (Richardson & Kile, 1992) by factors such as coursework and field experiences (Cochran-Smith & Zeichner, 2005). Other literature asserts that teacher candidates' conceptions of teaching and learning can be transformed through observation, interaction, and analysis in field settings (Wilson, Floden, & Ferrini-Mundy, 2001).

Responding to all of this research, the National Council of Accreditation for Teacher Education (NCATE) Blue Ribbon Panel (2010) called on teacher education programs to be "turned upside down" by shifting away from "course work loosely linked to school-based experiences" toward programs "fully grounded in clinical practice and interwoven with academic content and professional courses" (National Council for the Accreditation of Teacher Education, 2010, p. ii). However, while the 2010 report focused on strengthening capstone field experiences such as methods and student teaching, little research has focused on models to strengthen early field experiences.

Faculty surmised that turning a teacher education program upside down needed to begin with re-envisioning early field experiences that, until recently, were loosely tied to individual courses—but not structured to produce a coherent framework of clinical practice. Grounded in the panel's "Ten Design Principles" (NCATE, 2010, pp. 5-6), researchers created the *Adopt-An-Apprentice Teacher* Program to provide an early field model integrated into coursework. In particular, this project focused on the first six of the Blue Ribbon Principles (NCATE, 2010), reframed here as action statements:

1. Teacher candidates should be of service to the classroom teacher and their students.
2. Content and clinical practice need to be woven together to prepare preservice teachers to be of service.
3. An assessment system to collect and analyze data about our candidates is needed to strengthen the program.
4. Classroom mentor teachers should mentor candidates in ways that encouraged candidates to be innovators, collaborators, and problem solvers.
5. Candidates, faculty, and classroom mentor teachers should develop an interactive professional community.
6. Building systematic partnerships (Jones, Hobbs, Kenny, Campbell, Chittleborough, Gilbert, Herbert, & Redman, 2016; Sharp & Turner, 2008) with schools that have a shared vision and implementation plan for our teacher education program are central for developing candidates. Since the creation of this early field model, the recent publication of the American Association of Colleges for Teacher Education's report (American Association of Colleges for Teacher Education, 2018) calls for the development of more robust early field experiences, thus validating the general trajectory of this model.

To evaluate the merits of this program, we set out to answer three questions: What aspects of the *Adopt-An-Apprentice* program do teacher candidates view as beneficial to their understanding of the profession and their development as teachers? What benefits, if any, do classroom teachers derive from hosting teacher candidates in the *Adopt-An-Apprentice* program? What is the impact of grade band/subject-area field experiences on teacher candidates' conceptions of being a teacher?

THEORETICAL FRAMEWORK

Teacher candidate field experiences, dovetailed into campus coursework, are grounded in the work of educational scholars such as Dewey, Piaget, and Vygotsky. In his experiential learning theory, Dewey (1938) argued that learning occurs through experience. The learner adapts and learns by interacting with real concepts, problems, and world issues—by abstracting principles from lived experience. Piaget broke this idea down even further, exploring how learners construct meaning by juxtaposing new knowledge against prior knowledge through assimilation and accommodation (Piaget, 1954). Piaget explained how schematic maps, or schema, are constructed by organizing knowledge into a coherent framework. Through assimilation, the learner fits new concepts into existing schema. Accommodation occurs when new knowledge doesn't fit nicely into the existing schema, so the learner needs to stretch, reshape, or reframe the existing schema. Similarly, in Vygotsky's theory (1978), the learner learns not by remaining within his or her current developmental zone, but by being challenged or stretched beyond the current developmental zone across a zone of proximal development. Vygotsky understood that learning takes place by leaving this comfort zone, with support (i.e., scaffolding) from a mentor or more learned peer. All of these theories suggest that learning is not passive but active, not the absorption of information, but the active construction of meaning through interaction with the world. Real-world contexts give shape and meaning to the new concepts being learned, suggesting that classroom learning alone without a real-world context for application is insufficient.

IMPLEMENTING THE *ADOPT-AN-APPRENTICE* PROGRAM

Building Systematic Partnerships by Reframing the Discourse

At the beginning of this program, state-mandated testing associated teachers' performance and students' outcomes in ways that might lead to pay differences or removal from their positions; teachers feared losing their jobs if their students did not perform well. Some district partners considered rejecting student teachers because the burden of training them in 15 weeks, with testing outcomes on the line, was too great a risk. Simultaneously, program designers were about to ask districts to take on nearly 500 more first-year teacher candidates in new early field placements.

To help administrators and teachers re-envision the roles of first-year teacher candidates in the classroom, researchers reframed the discourse about the role of teacher candidates, focusing on how they might assist in classrooms. Doing so engaged NCATE principle six, building systematic partnerships (NCATE, 2010). Rather than ask districts to take on our first-year teacher candidates—language that suggests a burden—program designers communicated, "We have a large team of students who can be of service to you and want to learn. Would you like an apprentice teacher for the semester?" When the question was reframed, and the goals of the early field placements restructured, teachers began requesting first-year teacher candidates.

Method

This study examined the results of the newly created *Adopt-An-Apprentice Teacher* program, which merged introductory classes with field experiences early in teacher candidates' academic careers. The

investigation occurred in a midwestern public university's large undergraduate teacher education program over a two-year academic period, 2015-2017. Candidates in the study represented two teacher preparation programs: those seeking licensure in Adolescence-to-Young Adult Education (AYA), grades 7-12, and Middle Childhood Education (MCE), grades 4-9.

Participants

This study focused on participants in two sizeable teacher education programs and included a total of 468 candidates from both. Students in the Adolescent to Young (AYA) Education comprised majors in all four core disciplines: English language arts, math, science, and social studies. Candidates in the Middle Childhood Education (MCE) program, by state law, chose any combination of two concentration areas from among the same four subject areas. Commonly, candidates select either Language Arts and Social Studies, or Math and Science, as concentration areas, though any blend is permitted. All teacher candidates were enrolled in required, newly designed introductory freshman-level courses, for example, *Introduction to Teaching Secondary Mathematics* or *Introduction to Teaching Middle Grades Science*.

Also participating in the study were 85 teachers in 16 districts and 43 schools. Initial meetings with district superintendents led to the recruitment of teachers in grades 4-12. Education faculty sought suggestions from teachers about tasks novice teacher candidates might ably perform in their classrooms, and these were compiled into a list of task/activity recommendations distributed to both mentor teachers and candidates (See *Apprentice Activities Checklist* in Appendix). This initial collaboration, along with personal visits to school administrators and teachers, helped us begin to address NCATE principle five: "Candidates, faculty, and classroom mentor teachers should develop an interactive professional community."

Field Experiences

Teacher candidates enrolled in the newly created introductory courses were assigned to interested teachers in school classrooms correlating with candidates' grade bands and subject area specialties. Field visits occurred one morning per week, with busing to schools provided. Before placement visitation commenced, candidates participated in an orientation session outlining professional expectations, bus schedules, confidentiality, and other relevant issues. Keeping in mind NCATE statement 1, faculty stressed to candidates that their job was, first and foremost, to be of service to classroom teachers and students. Candidates were told they would be able to evaluate the *Apprentice* program and their field experiences at semester's end. Additionally, they were advised that classroom teachers would assess candidates' performance, as well.

Introductory Courses

Instructors in corresponding introductory courses offered both spring and fall semesters familiarized candidates with curriculum standards, inquiry-based pedagogical strategies, lesson planning fundamentals, and usually, an introduction to classroom management. Instructors linked field-based observations and activities with reflective assignments and follow-up discussions, in addition to course tasks associated with the discipline, making connections with students' experiences in field classrooms. Commonly, these links were fostered via required written reflections on candidates' perceptions gleaned from their

experiences in the field. These observations led to campus discussions about teacher duties, workload, and demeanor; teaching strategies; student abilities, motivation, and behavior; and classroom management, aligning with our interpretation of NCATE statement two: "Content and clinical practice need to be woven together to prepare preservice teachers to be of service."

Placements

As anticipated, the most challenging undertaking of the *Adopt-An-Apprentice-Teacher* program was securing placements for the approximately 468 teacher candidates in our middle childhood education (MCE) and secondary education (AYA) programs each year. We utilized existing school sites where student teachers were placed in previous years and added new potential sites received via responses on a survey sent to teachers. Our next step was to match candidates with field sites in their majors and grade bands. Initially, just five school districts accepted our MCE and AYA apprentices. Fortunately, some larger school district partners hosted as many as 40 teacher candidates per week, so eventually, all candidates received placements.

Evaluation

To facilitate the program evaluation process, teacher candidates were surveyed at the end of the semester to determine the value of the field experience in their overall learning (See *Apprentice Candidate Survey* in Appendix). As well, classroom mentor teachers (CMTs) were surveyed at the end of the semester to ascertain how they perceived the efforts of the teacher candidates placed in their classrooms (See *Apprentice CMT Survey* in Appendix). This was one step in responding to NCATE statement three—constructing an assessment system to collect and analyze data about our candidates to strengthen the program.

TWO CONTENT-SPECIFIC COMPONENTS OF *ADOPT-AN-APPRENTICE*

Within this larger framework of the *Apprentice* project, we spotlight two case studies that illustrate the rich impact such a field-based program can have on how candidates prepare to become teachers. The first project illustrates how an introductory mathematics education course focused on mathematical standards, and linked to authentic application in clinical settings, empowered secondary mathematics students to understand and engage mathematical standards. The second project illustrates how providing focused training in IRIs (Informal Reading Inventories) and text readability formulas enabled teacher candidates to assist with assessment and intervention of struggling readers in high school and middle school settings—thus having immediate positive impact on classrooms.

EXPLORING MATHEMATICAL STANDARDS IN REAL CONTEXTS

Programmatic Expectation for Secondary Mathematics Teacher Preparation

The Mathematical Education of Teacher [MET] II (American Mathematical Society, 2012) document provides clear guidelines about the expectations of mathematics teacher educator programs. It suggests

that future mathematics teachers should have multiple mathematics education courses alongside appropriate mathematics content courses (American Mathematical Society, 2012). Similarly, the Standards for Preparing Teachers of Mathematics (Association of Mathematics Teacher Educators, 2017) are:

intended as a national guide that articulates a vision for mathematics teacher preparation and supports the continuous improvement of teacher preparation programs. (p. 2)

The Council for the Accreditation of Educator Preparation (CAEP, 2016) also has standards for teacher preparation. All of these documents highlight the need for embedded field experiences that link university instruction with future classroom practices.

In this section, we illustrate how the *Adopt-An-Apprentice* model, particularly the early courses designed for first-year candidates, better link BGSU's middle grades and secondary mathematics teacher education program with guidelines and provides new opportunities for candidates to demonstrate competency. In particular, we focus on the second and fourth action statements.

Secondary Mathematics Education Coursework

BGSU coursework provides a pathway for candidates desiring to become secondary (grades 7-12) mathematics teachers. Prior to *Adopt-An-Apprentice*, students completed a course titled "Introduction to Secondary Mathematics Education" during their second year. This introductory course aimed to introduce candidates to ideas about the daily work of mathematics teachers, some content found in the secondary curriculum that is often difficult to teach, and a brief 10-hour field component. Where they spent those 10 hours was largely outsourced to faculty teaching the course, drawing on connections with teachers in the area. This posed an enormous burden on faculty and cooperating teachers and there were not systematized means for field placements.

During their third year, candidates completed a pre-methods course, which did not include a field component. During fall semester of the fourth year, candidates took a mathematics methods course. This methods course included a significant (120+ hour) field component, in which they became familiar with their students, their teacher, and the learning environment. They also taught a unit of instruction and become acquainted with school policies and expectations.

Spring semester of the fourth year included a student teaching internship, during which candidates worked alongside their cooperating mentor teachers for a full semester, teaching or co-teaching a minimum of twelve weeks. When BGSU initiated the *Adopt-An-Apprentice* model, it created a trickle-up effect such that faculty coordinated with school districts to move courses around during students' program, better integrate field work into current courses, and create new courses to meet students' needs.

Program revisions included moving the introductory course to the first year and leveraging the fieldwork for furthering candidates' thinking about mathematics teachers' roles and responsibilities. The fieldwork component changed from an unscheduled arrangement of 10 hours with two or three teachers to a series of scheduled weekly site visits for approximately 30 hours of apprenticing with one mathematics teacher. Two new mathematics content courses were developed for the second year of the program, which partnered with other education courses that allowed the *Adopt-An-Apprentice* model to be incorporated. We expected candidates to be better prepared for the teaching profession as a result of these changes, which we discuss in the next section. For this mathematics case study, our research

question is: *How has candidates' knowledge of the SMPs and SMCs developed through the Adopt-An-Apprentice model?*

Standards and Their Applications in Mathematics Instruction

Prior to the *Adopt-An-Apprentice* model, candidates were not introduced to standards in a meaningful way until their third year. Under the *Adopt-An-Apprentice* model, they completed an in-depth exploration into both content (*Standards of Mathematics Content*; SMCs) and practice (*Standards for Mathematical Practice*; SMPs). The SMCs describe what students should know and guides discussions about content that should be taught in each grade level or course (Council of Chief State School Officers, 2010). The SMPs characterize behaviors and habits that students and teachers should exemplify during mathematics teaching and learning (Bostic, Matney, & Sondergeld, 2017; Council of Chief State School Officers, 2010). Teachers are expected to know their standards and develop coherent lessons, using standards as a foundation (National Council of Teachers of Mathematics [NCTM], 2014, 2000).

DATA SOURCES AND ANALYSIS

Instrumentation

The data for this section come from two sources. First, there was a set of assignments in which candidates were required to select two questions about the secondary mathematics classroom and explore them. These questions were aligned with various NCTM standards (2014, 2007,2000). Questions focused on topics including, but not limited to, learning environment, mathematical discourse, rich tasks, lesson planning and task enactment, use of technology, and equity. The second source was a final exam, which asked candidates to: (a) locate and describe evidence of the SMPs and SMCs in a case study and; (b) express two notions they learned as a result of experiences in the course. A common thread across these two sources was knowledge of SMCs and SMPs. Thus, this section answers the question: *How has candidates' knowledge of the SMPs and SMCs developed through the Adopt-An-Apprentice model?* Effective responses for both data sources included claims, evidence from their fieldwork, and justification of their evidence using readings, class discussions, and other resources.

Participants and Context

To answer the research question, five semesters (i.e., two-and-a-half years) of candidates' responses to these questions were analyzed using inductive analysis (Hatch, 2002). In total, responses from 101 secondary teacher candidates who completed the first-year introductory mathematics course were analyzed, with the average class size being 20 candidates per semester. BGSU has a rich history in secondary mathematics teacher preparation; it is the 13th largest secondary mathematics teacher preparation program in the country and is unusually large compared to its overall institutional size (Fennell, 2015).

Analysis

A goal of inductive analysis is to draw out a theme (Hatch, 2002). After generating a series through analysis of initial candidates' ideas that broadly answered the question, responses were read a third time to discern whether there was sufficient evidence for them and/or counter evidence. Finally, topics that had a plethora of evidence and paucity of counter evidence became themes. Those ideas that became themes are shared here. All uses of names are pseudonyms.

Results

A single theme was broadly supported: Candidates linked university and field-based work in ways that demonstrate rich understanding of the SMPs and SMCs. Results suggested that the majority of secondary math candidates were able to correctly identify teachers' enactment of SMPs and SMCs, as well as students' engagement in them. Moreover, they frequently reported that their ideas about teaching and preparation for teaching changed dramatically, usually focusing on the uses of standards during lesson planning and implementation. Maria articulated how drawing on fieldwork through the *Apprentice* program supported her understanding of coursework:

Before this class and going into the field, I knew nothing about lesson planning, differentiation….I now have a much deeper meaning of what it means to be a teacher. My change in thinking started in the field.

After her experiences in the field site classroom, Megan articulated a more nuanced understanding of the methodologies she was being taught in her course: *I realize that there are ways in which to teach mathematical content so that students can understand mathematics more efficiently and be successful.*

Finally, Kaylie connected the importance of knowing the standards early in her program with her fieldwork:

SMPs were hard for me to grasp at first [in university coursework] and it was hard for me to be able to apply them in a classroom situation, but by seeing someone apply them in her classroom situation, it helped me deeply understand the SMPs….Because I was fortunate to see first-hand how she does this and talk with her about them, I was better able to understand the SMPs in our university classroom. Because the SMPs are very important, it is good that I got a better understanding of them so soon in my program.

From analysis of these comments and other similar candidate observations, we concluded that the *Adopt-An-Apprentice* model offered a unique opportunity to first-year students and sufficiently prepares them for further coursework and teacher preparation experiences.

Discussion: Connections to Programmatic Standards

As a result of the new first-year course and the *Apprentice* model, candidates were involved in weekly fieldwork within mathematics teaching contexts in appropriate grade-level settings. The connection between courses and fieldwork starting from the first year allows unique discussions to occur in the university setting, thus addressing CAEP's push for meaningful examinations of clinical partnerships and practice and programmatic impact. During the first year, teacher candidates deeply explore how

mathematics content and standards are planned and enacted in their field placement. They use field notes as evidence of what they observed for field-based assignments, and draw upon foundational texts (e.g., CCSSO, 2010; NCTM, 2014) to substantiate how their observations align with evidence that address classroom standards explored in class. Thus, their ideas are keenly grounded in the fieldwork through the *Adopt-An-Apprentice* model. Previously, such discussions about standards and classroom practice did not occur until teacher candidates' third year. Moreover, ten hours of fieldwork was not sufficient for students to gather meaningful data about teaching. Anecdotally, the discussion about SMPs and SMCs was superficial at best under the earlier teacher preparation program. Students rarely connected their ideas to fieldwork and, furthermore, could not effectively communicate the meaning of the SMPs and SMCs beyond reading the title. On the other hand, secondary mathematics teacher candidates in the new *Adopt-An-Apprentice* program are more effectively prepared to apply their knowledge and analyze instruction using enactment of the SMPs and SMCs as a lens. Drawing on a programmatic perspective, faculty recognize that meaningful field experiences working alongside teachers early in their teacher education program allow for deep explorations that could not have occurred under the old model.

It can be concluded that through the *Adopt-An-Apprentice* model, students learned about the standards they might teach and more importantly, what it means to engage 7th-12th graders in those practice and content standards. In sum, the apprentice model builds new avenues for teacher candidates' learning and connects their learning with authentic classroom experiences.

TRAINING PRE-SERVICE TEACHERS TO TEACH STRUGGLING READERS

The *Adopt-An-Apprentice* program is further strengthened in the introductory courses by providing cross-curricular training sessions during the initial weeks of the program. These sessions focus on working with struggling readers in the classroom. Research studies support the need for teacher preparation that helps build self-efficacy by providing reading strategies teachers can use in classroom contexts (Bandura, 1977; Massey & Lewis, 2011; Ness, 2008; Plucker, 2010).

Training sessions helped transform introductory candidates' beliefs in the simplicity of teaching, and opened their eyes to the scope of skills they need to be effective teachers who reach all learners (Darling-Hammond, 2006). Key skills such as assessing the readability of texts, assessing the reading level of students, and matching texts to students are often overlooked across content areas, or are often not taught until the third or fourth year of an undergraduate literacy program. Providing these skills earlier not only helps teacher candidates focus on the importance of reaching every learner, but also it allows them to be actively involved their early field placements during *Adopt-An-Apprentice*.

The goal for these sessions was to provide candidates with a skill set they could use within their *Adopt-An-Apprentice* field placement. If the classroom mentor teacher (CMT) had struggling students, our candidates would be equipped to work with them, and this would benefit the CMT, the struggling student, and our teacher candidates. With the skill set acquired during the training sessions, candidates would be able to measure readability levels of text and provide comprehension strategies that would strengthen the struggling students' understanding of content.

This case study focused on these research questions were: How did the struggling reader workshop change candidates' thinking about the importance of reading in their content areas? What assessment and intervention strategies did teacher candidates use in their *Adopt-An-Apprentice* field placement as a result of the professional develop workshop?

The Struggling Reader Workshop

The struggling reader workshop included two sessions. The first session explored an understanding of struggling readers in content areas and included the Informal Reading Inventory (IRI) training (Roe & Burns, 2011). The second session included training using readability formulas, including the Fry Readability Formula. In addition, candidates practiced vocabulary and comprehension strategies.

The First Session

The first session of training consisted of modeling and practicing the IRI. The IRI is a diagnostic assessment that evaluates key components of a student's reading ability, and is considered valid and reliable for matching students' reading abilities with the difficulty level of texts (Spector, 2005). The IRI consists of two components: lists of words in isolation and reading passages, both coded by grade level. Students' comprehension of the words in the lists helps establish a baseline reading level to begin assessing their comprehension of the leveled passages. After reading passages, students respond to follow-up questions that assess comprehension. Using scores from both components of the assessment, teachers arrive at a student's reading level. From here, teachers come to understand "the levels of reading material pupils can read both with and without teacher assistance" (Roe & Burns, 2011, p. 1),

The Second Session

The second session began with an exploration of the need to match texts to students reading levels using the Fry readability formula (Fry, 1977) and specific vocabulary and comprehension strategies. Using samples provided, candidates assessed the readability of a content area textbook. In addition, they explored the potential disconnects between their prospective students' reading levels (learned in session 1), and the readability levels of the texts they may be using in their classrooms.

Candidates then worked with various vocabulary and comprehension strategies that would provide students with background knowledge before working in the content, comprehension strategies that would monitor understanding during the process, and strategies that would measure comprehension and vocabulary acquisition following the lesson. These strategies included various graphic organizers, including the Frayer Model and LINCS for vocabulary, and various graphic organizers to organize student thinking around main ideas, details, sequencing, cause-and-effect, reasoning and problem- solving skills. These strategies would help to close the gap between text readability levels and struggling students' reading levels. The strategies and skills candidates practiced during both sessions could be utilized in their *Adopt-An-Apprentice* field placement.

DATA SOURCES AND ANALYSIS

Instrumentation

The data for this section came from pre- and post-surveys. The pre-workshop surveys were administered at the beginning of the workshop. Survey questions were open-ended and focused on participants' prior experiences using the IRI, the Fry readability formula, interest surveys, experience working with strug-

gling readers, and personal experiences as readers. The post-surveys were collected from candidates at the end of the semester at the conclusion to *Adopt-An-Apprentice*. Several were then interviewed at the end of the semesters to discover how they used the skills learned during training.

Participants and Context

In the spring of 2016, 39 AYA Integrated Language Arts (ILA) majors attended the struggling reader workshop. In fall of 2016, this expanded to 50 teacher candidates, including integrated social studies (ISS) students and ILA students. Since 2016, the program has grown further to include two semesters of training in all content areas. Starting fall 2017, training 125 candidates were trained. In spring 2018, an additional 100 teacher candidates were added across content areas each semester.

Analysis

To answer the research questions, qualitative data from pre-workshop surveys were analyzed using inductive analysis (Hatch, 2002) to understand candidates' prior assumptions about the relative importance of reading in content courses. Post-tutoring surveys and interview results were also analyzed using inductive analysis to develop key themes, and to focus on particular observations of interviewees. Finally, other data were gathered from the general end-of-semester survey administered to all *Apprentice* candidates. All uses of names are pseudonyms.

Results

Prior to the workshop, 84% of participants, outside of the language arts candidates, initially believed that teaching reading strategies belonged only in the language arts classroom or taught at the middle school level. While they had never considered having to teach reading strategies in their content area classrooms, during the training they became more aware of the complex needs of all learners and the strategies they might use to instruct them. They all (100%) agreed that reading does take place in their discipline and that they need to know the teaching and assessment strategies to work with struggling readers. Among several questions on post-tutoring surveys, candidates were asked: *Across the content areas, where does reading instruction belong, and who is responsible for teaching the reading strategies?* While roughly half (46%) the candidates said that the English or reading teacher is responsible, just over half (54%) felt that reading was important across the content areas. Several gave somewhat nuanced responses, characterized by this statement: "I think reading should be across the content areas, but reading specialists should teach strategies." This student's other responses suggested that her thinking about reading had shifted, but her experience doing the IRI, the Fry readability, and her experience in *Adopt-An-Apprentice* brought her around to understand how complex and important it was to perform assessment and intervention correctly.

After the *Adopt-An-Apprentice* semester was complete, we collected interview feedback from candidates, in response to three questions: (1) Was the Struggling Reader Workshop helpful in *Adopt-An-Apprentice*? How so? What specific skills did you get from the workshop, and what specific strategies are you applying in your field placement?

CONCLUSION

Two key reciprocal features of the struggling reader workshop illustrate its strengths. Candidates learned concepts and strategies in the workshop that enabled them to be more useful in the classroom. In addition, candidates' real-world hands-on classroom experiences helped them understand the core concepts taught in the workshop. Anna, for instance, learned specific assessment and intervention strategies that she applied to her *Adopt-An-Apprentice* experience:

I found the Struggling Reader Workshop to be incredibly helpful, as I had no prior experience before that. One aspect of the workshop I particularly liked was learning about the Fry Readability formula. This was crucial throughout my experience. Additionally, practicing the IRI with a partner during the workshop was beneficial because I felt more confident when it came time for me to facilitate it.

A second candidate, Kenzie, captured the level of insight she developed as a result of the workshop:

The workshop was incredibly helpful for me. I learned how to use the IRI and find the Fry Readability of different passages. Through the course of the semester and multiple 'retestings' of the IRI, I found out that one of my students was not at an 8th grade reading level as originally reported by her teacher. She was actually at grade 11 which was right where she should be for her grade, and the only thing holding her back was her confidence in reading. I was able to apply the IRI training that we had received to this exact situation and was able to more accurately understand what was going on in my student's life.

These training sessions provided early-career university students with their own hands-on, purposeful learning and developmental experience as they practiced administering and assessing reading levels and strategies during their *Adopt-an-Apprentice* field placement. The skills learned during the sessions were utilized during the *Apprentice* program as teacher candidates assisted classroom teachers.

EVALUATION OF THE ADOPT-AN-APPRENTICE PROGRAM

Evaluation Approach

This section offers an overview of the data generated through the *Adopt-An-Apprentice* program. This perspective may guide other programs considering structured changes to their teacher preparation program. The purpose of the semester evaluations were to explore the success of the program for MCE (grades 4-9) and AYA (grades 7-12) teacher candidates, with respect to these questions: What aspects of the *Adopt-An-Apprentice* program do teacher candidates view as beneficial to their understanding of the profession and their development as teachers? What benefits, if any, do classroom teachers derive from hosting teacher candidates in the *Adopt-An-Apprentice* program? What is the impact of grade band/subject-area field experiences on teacher candidates' conceptions of being a teacher? Researchers utilized a context, input, process, product approach (aka CIPP), which focuses on analysis of program

improvement (Stufflebeam, 2003), rather than proving that the program works. This aligns with CAEP's Standards (2015), which are intended to foster program improvements. Our methodological frame for evaluation was a mixed-methods explanatory approach (Cresswell, 2012). The explanatory approach provides users the ability to explain quantitative findings using qualitative data.

Data Sources

Instrumentation

Teacher candidates completed a survey at the end of each semester of their introduction to teaching the content courses. AYA majors took one introductory course during the freshman year, and MCE majors took two, corresponding to their two chosen areas of concentration, per state licensure requirements. The purpose of the survey was to gather perceptions about their apprentice experiences for program improvement. Survey questions were both quantitative and qualitative in nature.

Classroom mentor teachers (CMTs) completed a separate survey at the end of each semester, grounded in Danielson's Framework for Evaluating Teachers (2013) and INTASC Standards (CCSSO, 2011), focusing on candidate dispositions in four domains: (1) Planning and Preparation (for any tasks the teacher might assign); (2) Classroom Environment (i.e., demonstrating positivity, respect, and engagement with students, faculty, and staff); (3) Instruction (if presented the opportunity): individual, small group, and/or whole class, and; (4) Professional Responsibilities. CMTs were also invited to meet with programmatic faculty working in the *Adopt-An-Apprentice* program at the end of the academic year. These small-group interviews added further details about teachers' perceptions of the program. All names are pseudonyms.

Participants

Data were collected across the initial two years of the *Adopt-An-Apprentice* program. These data came from 468 first-year teacher candidates and their cooperating mentor teachers. Of the MCE and AYA apprentices, 72.5% (n=340) responded to the survey. Teacher candidates were placed in urban, suburban, and rural schools. Depending on the variety of candidates and teacher interest, students may be placed in public, charter, private, vocational, or religiously-affiliated schools. Eighty-five unique teachers hosted middle and secondary students over two years. Teachers often hosted one or two students each semester related to a particular subject area. It was typical for teachers who hosted students one semester to adopt an apprentice subsequent semesters.

Analysis

Quantitative data were analyzed using descriptive statistics. Qualitative data were analyzed using inductive analysis (Hatch, 2002). The process for creating a theme followed the same procedure as that done in an earlier section focusing on students' outcomes from the first-year mathematics program.

RESULTS

Quantitative Survey Results: Teacher Candidates

In this section, we highlight candidates' qualitative and quantitative evaluation data, followed by classroom teachers' evaluations. These results help to answer two questions: What aspects of the *Adopt-An-Apprentice* program do teacher candidates view as beneficial to their understanding of the profession and their development as teachers? What is the impact of grade band/subject-area field experiences on teacher candidates' conceptions of being a teacher?

Types of Teacher Activity

Eighty-three percent (n = 282) of respondents reported they were actively engaged in three key types of teacher activity: (1) interacting with students or instruction; (2) preparation or lesson planning, and; (3) clerical (Table 1). Examples related to those three key types are shown below.

Of the respondents, 17% (n=58) reported non-interactive tasks such as observation or clerical-only tasks that did not include any interaction with students. Observational experiences ranged from simple classroom observations to more focused IEP observations. Clerical tasks included grading, setting up bulletin boards, sorting material in filing cabinets, finding online resources, displaying projects, entering grades, and watching the teacher lecture.

Benefits of The Apprentice Program Field Experience

Both quantitative and qualitative survey data revealed the benefits of the *Adopt-An-Apprentice* program. Quantitative survey results indicated that approximately 95% (n=323) of students reported positive

Table 1. Activities completed by teacher candidates

Interacting with Students or Instruction	Lesson Planning	Clerical
Working one-on-one with students or leading stations as part of co-teaching	Preparing mini-lessons to teach on their own	Grading
Assisting with technology/inquiry lessons that require hands-on activity and writing	Helping the teacher revise/ develop lesson plans	Finding supplemental materials to scaffold comprehension
Administering small formative assessments and reviewing content before unit test with students	Setting up science labs	Creating/setting up bulletin boards
Re-teaching (e.g., preparing students for state assessments) and engaging in close reading of texts/math problems		Sorting cabinets
Assisting with math concept formation		Finding online sources
Co-teaching small groups with teacher including leading warm-up activities		Finding supplemental materials to scaffold comprehension
Assisting with technology, inquiry lessons that require hands-on activity, and writing		

experiences in their field placements, with only 5% (n=17) indicating neutral or negative sentiments. Qualitative results indicated ten key factors that made the *Adopt-An-Apprentice* program a beneficial experience (Table 2).

Many candidates shared how beneficial it was to experience classroom management strategies in a real classroom setting. Others were excited to develop their rapport with students as they learned to be perceived as a knowledgeable adult figure in the classroom. Still others felt the opportunity to get hands-on experience was beneficial to the extent that it led to improving their skills as teachers. Other candidates reflected that the field experience helped them gain new perspectives on teaching; it opened their eyes to the benefits and challenges of new school settings, such as urban schools. Some of them shifted their teaching focus, recognizing that they would be happier in a different grade band or content area. Others noted a growth in their own dispositions; they learned patience and a deeper understanding of diversity. Still others reported that learning about classroom assessments, and state-mandated assessment, led them to see the rigor and complexity of the teaching profession. In addition, while some candidates noted that the field experience made them feel more comfortable in the classroom, others argued that it pulled them out of their comfort zone—something they saw in a positive light. Finally, one of the largest set of responses clustered around the benefits of working with really strong or excellent teachers; they felt mentored by someone they aspired to be like.

The 5% (n=17) of candidates who reported few-to-no benefits after the *Adopt-An-Apprentice* field experience indicated they had not been permitted to actively participate in their classrooms and had simply sat and observed. Four candidates reported they had been placed with negative or ineffective teachers. The only benefit two described deriving from their placements was learning what kind of teachers they did *not* want to become: *"I learned what not to do and how a teacher's work ethic and enthusiasm impact a classroom." "I got to experience a kind of teaching that I never want to experience again. I now know what kind of teacher I want to be and how I want to teach."*

Qualitative Survey Results: Teacher Candidates

This project explored the question: What aspects of the *Adopt-An-Apprentice* program do teacher candidates view as beneficial to their understanding of the profession and their development as teachers? Beyond the statistical analysis, the qualitative results allowed us to unpack richer answers to those questions. Several candidates' comments illustrate a key feature of the program: *Adopt-An-Apprentice* uniquely positioned candidates with classroom mentor teachers in ways that leveraged opportunities for professional growth. For example, one candidate, Matthew, wrote:

Table 2. Key factors of benefits of Adopt-An-Apprentice program

(1) Classroom management experience	(6) New teaching focus
(2) Developing rapport with students	(7) Shift in dispositions
(3) Improved skills	(8) Learning about assessment
(4) New perspectives	(9) Expanding one's comfort zone
(5) New school settings	(10) Opportunity to work with a strong teacher

Note: Factors are ordered in most frequently cited to least.

I was able to see the many different aspects that go into teaching, such as lesson planning and prepping for classes. I was able to see when lessons go smoothly and as planned or when they do not go as planned. I was able to work with small groups and figure out how they can best be helped with the activity they were working on.

Another candidate, Josephine, added:

I was involved in team planning, making lesson plans, co-teaching, and many other things. I got the opportunity to be part of an inclusive classroom. It has sparked my new passion for co-teaching and inclusion. I learned a lot, and to have early experience in the classroom helps tremendously.

Similarly, Jackson reported: *I feel so much more confident in a classroom. My cooperating teacher told me she could really see me grow this past semester.* Candidates' saw their growth arise not only from being able to observe strong teaching, but from being invited to participate in the design and implementation of the lesson, and from close interaction with students.

Quantitative Results: Classroom Teacher

Results from classroom teachers helped to address one of our questions: What is the impact of grade band/subject-area field experiences on teacher candidates' conceptions of being "a teacher"? Teachers ranked and commented on candidates' performance in each of the four Danielson (2013) domains—Planning and Preparation, Classroom Environment, Instruction (where applicable), and an overall evaluation of candidate Professionalism (Table 3).

Table 3. Candidates' performance as rated by teacher

Question	Always	Some times	Rarely/ Never	N/A
The teacher candidate prepares and completes tasks, as assigned by the classroom teacher, in a timely and high-quality fashion **(Planning and Preparation)**	92%	7%	1%	0%
The teacher candidate demonstrates positivity and appropriate respect in all interactions with school students and staff, regardless of race, language, ability, physical characteristics, etc., actively engages with the classroom teacher, actively engages with students, and seeks to assist and provide service in whatever ways needed **(Classroom Environment)**	84%	12%	4%	0%
The teacher candidate, if instructing individuals, small groups, or the whole class, is knowledgeable and engages appropriately with students, and demonstrates initial understanding of students' developmental needs **(Instruction)**	49%	13%	1%	36%
The teacher candidate attends regularly and punctually, as required, communicates clearly, promptly, and accurately in reporting absences, schedule changes, etc., dresses appropriately for the school setting, and exhibits suitable and respectful written and oral communication **(Professionalism)**	90%	7%	3%	0%

Note: n (teachers) = 85.

There was strong agreement that candidates were active and responsive to classroom teachers' needs, and that teachers felt candidates were positive, respectful, and engaged. However, while there was strong agreement across that teachers felt candidates demonstrated an understanding of students' developmental needs, data suggest that some teacher candidates did not get an opportunity to interact with students on a level that addressed students' developmental needs. Overall, there was strong agreement across our sample suggesting that teachers felt candidates were professional.

Regarding overall professionalism and CMTs' desire to have the candidates return, 95% (n=81) of CMTs responded positively (Table 4).

Qualitative Results: Classroom Teachers

Results related to classroom teachers helped to answer the following question: What benefits, if any, do classroom teachers derive from hosting teacher candidates in the *Adopt-An-Apprentice* program? Teachers' comments illustrate several salient features of the program: Developing strong teacher candidates happens over time through supportive professional mentoring, but the payoff is enthusiastic students who are engaged and supported in their learning process. Mr. Kruser described the evolution of his teacher candidate:

He was very engaged with students. They absolutely loved working with Davis. He was very hands-on with students any time I needed. By mid-semester, I felt comfortable providing him with instruction and trusted him to assist students as I hoped.

Ms. Schlossing's description reveals a thoughtful, knowledgeable teacher candidate who was building connections between course content and the pedagogy of the classroom:

Brooke was reflective about the things that she saw in the classroom and how they related to what she was learning in her university classes. We were able to have conversations about the mathematics being taught by the student teacher. Brooke seems strong in her math knowledge for a first-year candidate and is eager to learn methods for effective instruction.

A third comment from Mr. Folgers captured the engagement a motivated candidate can bring to a classroom:

She [Elizabeth] was always engaged with the students. Even though a lot of her initial work was observation, when I was working on things with students – she jumped right in and helped. The students loved it when she was in the room!

Table 4. Results from CMTs' responses to survey

Professionalism	Extremely	Moderately	Neutral/Negative
CMT Response	75%	18%	5%
Would you want the candidate to return?	**Yes**	**Possibly**	**No**
CMT Response	81%	14%	4%

Note: n (teachers) = 85.

It was clear that it took time for teachers to build trust with their teacher candidates, but after forging that relationship, teachers were prepared to offer candidates more teaching responsibilities, and perceived candidates as both reflective practitioners and welcome additions to their classrooms.

Further Qualitative Results

Results helped to illuminate the phenomenon related to the question: What is the impact of grade band/ subject-area field experiences on teacher candidates' conceptions of being a teacher? Candidates' and teachers' comments reveal the interactive learning that happens even in the less-than-glamorous tasks associated with teaching. Candidates reported that they learned about life as a teacher and had more data with which to make career choices. Chloe articulated a fundamental discovery about the importance of grading.

I found out the time it takes to grade everything! My teacher had me grade stuff every time I visited. While grading takes time, I know how important it is for my future students to get feedback about what their [sic] learning.

Teachers such as Mr. Spearing captured the value in having candidates face the realities of teaching early in their careers.

This program forces candidates to confront whether this is truly the profession for them, which is a great way to help young college students carve out a career path.

It was evident that both candidates and teachers perceived knowing the profession as an apprentice leveraged new knowledge that was not previously available without substantial fieldwork integrated into university courses. While the survey data and end-of-semester course feedback confirm that the *Adopt-An-Apprentice* field experience is widely viewed by candidates and classroom teachers as a value-added component to our introductory content classes, this study gives us a lens through which to assess our progress toward our overall conceptual goals, and address the ongoing logistical challenges and conceptual issues that require our attention for improvement.

IMPLICATIONS AND RECOMMENDATIONS

There are many aspects of the *Adopt-An-Apprentice Program* that need to be improved, but there are clearly two overarching aspects: logistical applications and CAEP core principle implementation.

Logistical Issues

Candidates' suggestions for program improvement clustered around seven issues: transportation, place-ment issues, more teaching opportunities, stronger mentoring, clearer orientation, more time in the classroom, and no improvement needed—although transportation was by far students' biggest concern. This is likely because busing problems detracted from quality time in classrooms getting opportunities to teach, co-teach, or interact with students.

Despite the massive conceptual and logistical reconfiguration that has led to the success of the *Adopt-An-Apprentice* program, there are still many challenges to be worked out regarding the suitable placement, transportation, communication procedures and site monitoring, and assessment of so many students and their field site CMTs. These logistical problem will need to be explored more systematically beyond the scope of this study. However, they hint at a deeper conceptual challenge: While these teachers are integral in establishing a shared vision, that shared vision does not yet exist. Ironing these things out will take stronger collaboration with school partners.

Engaging the CAEP Core Principles

Despite the researchers efforts to engage CAEP principles, three of the core action statements remain under-realized, and thus serve as a compass to guide next efforts: (1) Classroom mentor teachers should mentor candidates in ways that encourage candidates to be innovators, collaborators, and problem solvers; (2) Candidates, faculty, and classroom mentor teachers should develop an interactive professional community, and; (3) Building systematic partnerships with schools that have a shared vision and implementation plan for our teacher education program are central for developing candidates. While this program has begun to move novice teacher candidates in the direction of being innovators, collaborators, and problem solvers, we do not yet have a systematic or comprehensive approach across the *Adopt-An-Apprentice* program. In individual cases, candidates engage opportunities to use their research skills to assist the CMT in planning a future unit or lesson, or developing a more innovative approach to a topic. In some cases, our candidates have opportunities to collaborate with their CMTs by taking over small group interactions within the larger class dynamic. In the case of the literacy workshop, some candidates are being given the opportunity to be problem solvers, by applying their newly-honed skills of IRI pre-assessment and text analysis as they work with struggling readers, while others are not.

However, the systematic partnerships with schools, and the shared vision and implementation plans, have not been fully realized. We are moving in this direction. Recent planning retreats have paired campus faculty with some of our strongest lead teachers to frame the next steps in the shared vision and implementation of our teacher education program. So far, it has been driven predominantly by campus faculty. This shared vision will need to happen when we tackle the field component for the second year of the teacher education program.

NEXT STEPS FOR THE *ADOPT-AN-APPRENTICE* PROGRAM

There are several components necessary to the achievement of our CAEP goals. First, we need to strengthen existing school partnerships to better implement the *Adopt-An-Apprentice* first year field experience. Similar successful projects are built on "third space" models where university-based needs and school-based needs are met and balanced by developing a third space—shared design components to achieve shared goals (AACTE, 2018; Reischl, Khasnabis, & Karr, 2017). Second, we need to extend and adapt the clinical partnership model in the second and third years of candidates' coursework and field experiences. Program designers are currently in the process of framing goals for the second-year experience.

One way that we are making revisions is using the struggling reader workshop model to further train candidates to work more closely with individuals and small groups of students. This framework is evolving in response to calls from administrators asking for tutors. Third, involvement of campus faculty needs

to be strengthened. The *Adopt-An-Apprentice* program was developed and piloted by a small dedicated team. Sustaining it will require a wider involvement in the day-to-day management of the project, in the regular classroom visits, and in the shared partnership model described above. Finally, while the program has already engaged in assessment, advisement, and intervention of these novice candidates—especially those struggling in field experiences—these elements will need to be integrated into the more comprehensive candidate support and intervention model used with our fourth-year methods and student teachers. And beyond intervention of candidates struggling in their field experiences, a stronger system for the recognition of outstanding teacher candidates needs to be developed.

CONCLUSION

Two key reciprocal features of the *Adopt-An-Apprentice* program illustrate its greatest strengths: (1) Students learned concepts and strategies in coursework and workshops that enabled them to be more useful in the classroom, and; (2) Students' real-world hands-on classroom experiences helped them understand the core concepts taught in their intro courses and workshops. Both the literacy and mathematics case studies illustrate the reciprocal nature of this partnership between university teacher education programs and field site schools. Candidates from both projects also captured the more interesting aspect of *Adopt-An-Apprentice*—that the experiences they brought back from the field deepened their understanding of course concepts.

It is important to note that the mathematics and literacy projects were built on two very different models—in-class exploration of mathematics SMCs and SMPs, and workshops in reading assessment. *Adopt-An-Apprentice* is not a one-size-fits-all approach, but a framework in which university faculty were empowered to follow their lines of research and expertise and deliver content and pedagogical tools to candidates that will serve the needs of teachers and students in their partner schools.

Adopt-An-Apprentice was developed within an experiential learning framework (Dewey, 1938) where learners construct deeper understandings of concepts through real-world scenarios guided by a mentor or more learned peer (Vygotsky, 1978). The program was also developed in part to address the NCATE Blue Ribbon Panel's *Ten Design Principles* (NCATE, 2010) and AACTE's new *pivot* challenge (AACTE, 2018). Program designers set out to have teacher candidates be of service to classroom teachers within a framework that allowed them to collect and analyze data for program improvement. These components are firmly in place and can evolve as program needs, goals, and vision evolve. Program designers also set out to foster candidates alongside their classroom mentor teachers to be innovators, collaborators, and problem solvers. Another goal was to build systematic partnerships with schools that engage a shared vision and implementation plan. These last two components of our teacher education program will become the focus of the next steps in program development.

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REFERENCES

American Association of Colleges for Teacher Education. (2018). *A pivot toward clinical practice, its lexicon, and the renewal of educator preparation: A report of the AACTE clinical practice commission.* Washington, DC: AACTE.

American Mathematical Society. (2012). *The mathematical education of teachers II*. Retrieved from http://www.cbmsweb.org/archive/MET2/met2.pdf

Association of Mathematics Teacher Educators. (2017). *Standards for preparing teachers of mathematics: Executive summary*. Retrieved from https://amte.net/sites/default/files/SPTM_ExecSummary.pdf

Baeton, M., & Simons, M. (2016). Innovative Field Experiences in Teacher Education: Student-Teachers and Mentors as Partners in Teaching. *International Journal on Teaching and Learning in Higher Education*, *28*(1), 38–51.

Ball, D. L. (2000). Bridging practices: Intertwining content and pedagogy in teaching and learning to teach. *Journal of Teacher Education*, *51*(3), 241–247. doi:10.1177/0022487100051003013

Ball, D. L., & Forzani, F. M. (2011). Building a common core for learning to teach, and connecting professional learning to practice. *American Educator*, *35*(2), 17–21, 38–39.

Bandura, A. (1997). *Self-efficacy: The exercise of control*. New York: W. H. Freeman and Company.

Bostic, J., Matney, G., & Sondergeld, T. (in press). A lens on teachers' promotion of the Standards for Mathematical Practice. *Investigations in Mathematics Learning*. doi:10.1080/19477503.2017.1379894

Boyd, D. J., Grossman, P. L., Lankford, H., Loeb, S., & Wyckoff, J. (2009). Teacher preparation and student achievement. *Educational Evaluation and Policy Analysis*, *31*(4), 416–440. doi:10.3102/0162373709353129

Britzman, D. (2000). Teacher education in the confusion of our times. *Journal of Teacher Education*, *51*(3), 200–205. doi:10.1177/0022487100051003007

Cochran-Smith, M., Villegas, A. M., Abrams, L., Chavez-Moreno, L., Mills, T., & Stern, R. (2015). Critiquing Teacher Preparation Research: An Overview of the Field, Part II. *Journal of Teacher Education*, *66*(2), 109–121. doi:10.1177/0022487114558268

Cochran-Smith, M., & Zeichner, K. (Eds.). (2005). *Studying teacher education: The Report of the AERA Panel on Research and Teacher Education*. Washington, DC: American Educational Research Association.

Coffey, H. (2010). *"They* taught *me"*: The benefits of early community-based field experiences in teacher education. *Teaching and Teacher Education*, *26*(2), 335–342. doi:10.1016/j.tate.2009.09.014

Council for the Accreditation of Educator Preparation. (2013, June). *The CAEP Standards*. Retrieved from http://caepnet.org/standards/

Council of Chief State School Officers. (2010). *Common core state standards initiative: Common core state standards for mathematics*. Washington, DC: National Governors Association Center for Best Practices and Council of Chief State School Officers. Retrieved from http://www.corestandards.org

Council of Chief State School Officers. (2011). *Interstate Teacher Assessment and Support Consortium (InTASC) Model Core Teaching Standards: A Resource for State Dialogue*. Washington, DC: Author.

Cresswell, J. (2012). *Educational research: Planning, conducting, and evaluating quantitative and qualitative research* (4th ed.). Boston: Pearson.

Danielson, C. (2013). *The framework for teaching evaluation instrument*. The Danielson Group.

Darling-Hammond, L. (2006). Constructing 21st-century teacher education. *Journal of Teacher Education*, *57*(3), 300–314. doi:10.1177/0022487105285962

Darling-Hammond, L. (2010). Teacher education and the American future. *Journal of Teacher Education*, *61*(1-2), 35–47. doi:10.1177/0022487109348024

Darling-Hammond, L., Chung, R., & Farlow, F. (2002). Variation in Teacher Preparation: How Well Do Different Pathways Prepare Teachers to Teach? *Journal of Teacher Education*, *53*(4), 286–302. doi:10.1177/0022487102053004002

Dewey, T. (1938). *Experience and education*. Collier Books.

Fennell, F. (2015, February). *Mathematics teacher education: Normal schools to now.* Paper presented at the meeting of the Association of Mathematics Teacher Educators conference, Orlando, FL.

Fry, E. (1977). Fry's readability graph: Clarifications, validity, and extensions to level 17. *Journal of Reading*, *21*(3), 242–252.

Hatch, A. (2002). *Doing qualitative research in education settings*. Albany, NY: State University of New York Press.

Heck, T. W. (2013, Nov. 1). *A new student teaching model for pairing interns with clinical teachers*. Retrieved from https://www.edutopia.org/blog/co-teaching-internship-model-teresa-heck

Huling, L. (1998). *Early field experiences in Teacher Education*. Washington, DC: ERIC Clearinghouse on Teacher Education.

Jones, M., Hobbs, L., Kenny, J., Campbell, C., Chittleborough, G., Gilbert, A., ... Redman, C. (2016). Successful university-school partnerships: An interpretive framework to inform partnership practice. *Teaching and Teacher Education*, *60*, 108–120. doi:10.1016/j.tate.2016.08.006

Massey, D. D., & Lewis, J. (2011). Learning from the "Little Guys": What do middle and high school preservice teachers learn from tutoring elementary students? *Literacy Research and Instruction*, *50*(2), 120–132. doi:10.1080/19388071003725705

Meyer, S. J. (2016). *Understanding field experiences in traditional teacher preparation programs in Missouri (REL 2016–145)*. Washington, DC: U.S. Department of Education, Institute of Education Sciences, National Center for Education Evaluation and Regional Assistance, Regional Educational Laboratory Central. Retrieved from http://ies.ed.gov/ncee/edlabs

National Council for Accreditation of Teacher Education. (2010). *Transforming teacher education through clinical practice: A national strategy to prepare effective teachers. Report of the blue ribbon panel on clinical preparation and partnerships for improved student learning*. Washington, DC: National Council for Accreditation of Teacher Education.

National Council of Teachers of Mathematics. (2000). *Principles and standards for school mathematics*. Reston, VA: Author.

National Council of Teachers of Mathematics. (2007). Mathematics teaching today: Improving practice. In T. Martin (Ed.), *Improving student learning* (2nd ed.). Reston, VA: National Council of Teachers of Mathematics.

National Council of Teachers of Mathematics. (2014). *Principles to action: Ensuring mathematical success for all*. Reston, VA: Author.

Ness, M. K. (2008). Supporting secondary readers: When teachers provide the "What," not the "How.". *American Secondary Education*, *37*(1), 80–95.

Piaget, J. (1954). *The construction of reality in the child*. Basic Books. doi:10.1037/11168-000

Plucker, J. M. (2010). Baiting the reading hook. *Educational Leadership*, *68*(2), 58–63.

Reischl, C., Khasnabis, D., & Karr, K. (2017, May). Cultivating a school-university partnership for teacher learning. *Phi Delta Kappan*, 48-53.

Richardson, V., & Kile, R. S. (1999). The use of videocases in teacher education. In M.L. Lundberg, B. Levin, & H. Herrington (Eds.), Who Learns from Cases and How? The Research Base for Teaching With Cases. Jossey Bass.

Roe, B., & Burns, P. (2011). *Informal Reading Inventory: Preprimer to twelfth grade* (8th ed.). Belmont, CA: Wadsworth.

Sharp, S., & Turner, W. (2008). Sustaining relationships in teacher education partnerships: The possibilities, practices and challenges of a school-university partnership, preparing teachers for the future. *International Journal of Learning*, *15*(5), 9–14. doi:10.18848/1447-9494/CGP/v15i05/45772

Spector, J. (2005). How reliable are informal reading inventories? *Psychology in the Schools*, *42*(6), 593–603. doi:10.1002/pits.20104

Stufflebeam, D. L. (2003). The CIPP Model for Evaluation. In T. Kellaghan & D. Stufflebeam (Eds.), *International Handbook of Educational Evaluation*. Dordrecht, Netherlands: Springer. doi:10.1007/978-94-010-0309-4_4

Vygotsky, L. (1978). *Mind in society*. Boston, MA: Harvard University Press.

Weinstein, C. S. (1990). Prospective elementary teachers' beliefs about teaching: Implications for teacher education. *Teaching and Teacher Education*, *6*(3), 279–290. doi:10.1016/0742-051X(90)90019-2

Weiss, M., Pellegrino, A., & Brigham, F. (2017). Practicing collaboration in teacher preparation: Effects of learning by doing together. *Teacher Education and Special Education*, *40*(1), 65–76. doi:10.1177/0888406416655457

Wideen, M., Mayer-Smith, J., & Moon, B. (1998). A critical analysis of the research on learning to teach: Making the case for an ecological perspective on inquiry. *Review of Educational Research*, *68*(2), 130–178. doi:10.3102/00346543068002130

Wilson, S. R., Floden, R. E., & Ferrini-Mundy, J. (2001). *Teacher preparation research: Current knowledge, gaps, and recommendations*. Center for the Study of Teaching and Policy, University of Washington.

Zeichner, K. (2010). Rethinking the connections between campus courses and field experiences in college and university-based teacher education. *Journal of Teacher Education*, *61*(1-2), 89–99. doi:10.1177/0022487109347671

APPENDIX

Apprentice Activities Checklist: Learning Activities for BGSU Apprentice Teachers in School Sites (Suggested by Classroom Teachers!)

BGSU Apprentice: _____

Classroom Teacher: _____

Teachers: Our apprentice teachers learn the most when they are actively involved, assisting you and your students! Please mark and share with your apprentice the following list of tasks you would like him or her to be responsible for during his/her time in your school and classroom. Thank you!!

_____ Read over a lesson to be taught in the near future. List or describe possible obstacles the students might encounter during the lesson. How might these obstacles be addressed/overcome?

_____ Grade and record papers/tally most missed questions.

_____ Work with a small group of students to help them better understand ideas from a homework assignment.

_____ Look online for a lesson through ohiorc.org that is on the same topic the teacher is teaching.

_____ Take notes for absent student/take responsibility for collecting and getting missed material to absent students/work with absent student to help with missed content while gone.

_____ Shadow one particular student through entire day; record similarities and differences from class to class.

_____ Observe 2 or more teachers teaching the same topic and record similarities and differences.

_____ Pass out, collect, organize, and/or review student papers.

_____ Design a new seating arrangement after becoming familiar with the students / design different grouping structures for different purposes

_____ Select one student and record their behavior once every 60 seconds; attend to and describe the level of engagement at each interval

_____ If the teacher desires, chart his/her interaction with students. Tally interaction between males verses females, etc. Look for patterns.

_____ Similarly, with teacher approval, tally who is speaking every 60 seconds: teacher or student?

_____ Identify and tally type of teacher talk: directive, reinforcement, question, praise, etc.

_____ Read one of the Teachers SLO's and write recommendations on how students might achieve it.

_____ Complete an OTES walk-through check sheet for one or more teachers.

_____ Using an OTES rubric, highlight each piece of evidence for a complete lesson.

_____ Create alternate form of a quiz or test / create alternative assessment with modifications for a specific IEP.

_____ Draw the room layout including student desks, teacher desks, windows, shelves, white/blackboards, storage areas, etc. Consider and comment on changes that might improve the learning environment.

_____ Choose a material to create or improve for the teacher, such as poster, game, handout, display power point, flash cards, adaptive material, sample project, interactive white board activity.

_____ Create a bulletin board.

_____ Walk around the room, observe students working, and write down the names of students whose work should be shared with the whole class.
_____ Create an exit or entrance ticket for a lesson. Analyze the data and make a recommendation.
_____ Analyze test data for the classroom teacher.
_____ Research an upcoming lesson topic for the classroom teacher.
_____ Create a PowerPoint or Smart Board presentation on a topic requested by the classroom teacher.
_____Lead a class discussion, plan a brief learning activity, or co-plan and teach with the classroom teacher.
_____ Other:_____

Apprentice Candidate Survey

Please answer this brief survey regarding the field experience(s) associated with your Introduction to Math, Science, Social Studies, and/or Language Arts courses as well as the Introduction to Education course.

1. In what program area are you enrolled? (i.e. Inclusive Early Childhood, Middle Childhood, Adolescent and Young Adult, etc.)
2. What is you major or concentration areas. (i.e. Early Childhood, Integrated Language Arts, Math, Science, Social Studies, etc.)
3. Which introductory class(es) did you take (please check all)?
4. When did your field experience begin?
5. In what school where were you placed?
6. Were you able to observe teaching in your field experience?
7. Were you able to participate in teaching-type activities?(i.e. .....)
8. Please identify the types of teaching activities in which you were engaged.
9. If you were not participating in teaching-type activities, what activities were you performing in your field placement?
10. What benefits did you derive from the field experience?
11. What suggestions do you have for improving the field experience(s) associated with these classes? (Please be specific to which course you are referring to.)

Apprentice Classroom Mentor Teacher (CMT) Survey

BGSU teacher candidates at all levels are expected to demonstrate professionalism in the following domains, which are aligned with InTASC Core Teaching Standards (April 2013), as well as Charlotte Danielson's (2013) Framework for Teaching:

- Planning and professionalism
- Maintaining a positive classroom presence/environment
- Instruction (where possible)
- Professional responsibilities

We encourage you to provide feedback on the BGSU teacher candidate(s) working in your classroom, so we can offer appropriate guidance to these young students. We value your input!!

1. Candidate Name
2. Teacher Name
3. School
4. Semester/Term
5. Subject and Grade Level
6. Domain I. Planning and Preparation. The teacher candidate prepares and completes tasks, as assigned by the classroom teacher, in a timely and high-quality fashion.
7. Domain II. The Classroom Environment. The teacher candidate demonstrates positivity and appropriate respect in all interactions with school students and staff, regardless of race, language, ability, physical characteristics, etc., and actively engages with the classroom teacher, actively engages with students, seeks to assist and provide service in whatever ways needed.
8. Domain III. Instruction. (May not be applicable for Year 1 and Year 2 students). The teacher candidate (if instructing individuals, small groups, or the whole class) is knowledgeable and engages appropriately with students and demonstrates initial understanding of students' developmental levels.
9. Domain IV. Professional Responsibilities. The teacher candidate attends regularly and punctually, as required, communicates clearly, promptly, and accurately in reporting absences, schedule changes, etc., dresses appropriately for the school setting, and exhibits suitable and respectful written and oral communication.
10. The teacher candidate uses appropriate language and gestures, displays receptiveness to feedback on performance, seeks to implement suggestions, demonstrates ethical and legal use of technology and social media, safeguards confidential information regarding students, families, faculty, and staff, displays integrity and ethical conduct, and complies with school and district regulations.
11. Overall rating of candidate's professionalism/Comments:
12. Has this teacher candidate's performance been such that you would welcome him/her back into your classroom at some point in the future?
13. Comments on candidate's professionalism:
14. Comments or suggestions for program improvement: