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## Beyond Problem-based Learning: How a Residency Model Improves the Education of Pre-service Teachers

# BEYOND PROBLEM-BASED LEARNING: HOW A RESIDENCY MODEL AFFECTS THE EDUCATION OF PRE-SERVICE ELEMENTARY TEACHERS

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**Abstract:** In 2010, the state of Tennessee embraced the call to overhaul teacher education and required programs to adopt a residency model within K-12 schools. How exactly this would affect the various methods courses in a teacher education program? This paper provides a description of how two elementary education methods courses have shifted from simulation-style projects to projects that involve working with actual elementary students throughout the semester. This article presents an overview of the new residency style methods courses, along with how major assignments shifted to utilize the extensive time pre-service teachers would spend in the elementary school classroom.

## INTRODUCTION

Recent trends in education have emphasized teacher education models that are more field-based with experiences in school occurring as early as possible. The call for reform was best summarized by Secretary of the Department of Education Arne Duncan when he stated, “America’s university-based teacher preparation programs need revolutionary change – not evolutionary tinkering” (2009). In Tennessee, statewide meetings were held for colleges of teacher education to investigate the medical model as a preferable framework to follow in the preparation of teachers (Hoffman, Hosokawa, Blake, Headrick, & Johnson, 2006). Extensive training for faculty and administrators began in 2009, with an emphasis on problem-based learning and using a residency model (Barron, Preston-Sabin, & Kennedy, 2013). As teacher educators, how this shift affects campus-based methods courses in mathematics and language arts is of great importance. This purpose of this article is to answer the questions: 1) What does the enactment of this reform look like in teacher preparation courses? and 2) How are methods courses impacted by the shift from simulation of teaching to actual implementation in elementary school classrooms?

## METHOD

In order to best answer the above questions, documents were collected that would aid the understanding of how each methods class had shifted over the course of the transition. These documents included: syllabi, instructor notes, and schedules from the current and former instructors of both the language arts and mathematics methods courses. Each document was carefully analyzed for repetitions as well as changes in assignments and semester structures. This analysis was combined with the researchers’ own knowledge of the structure of the courses and how the courses have adapted and changed since 2010.

The balance of this paper is structured in two primary sections. The first describes our residency model in the preparation of elementary school teachers, which our university calls the Ready2Teach program, and how a mathematics methods course and language arts methods course have been modified to enact this new framework.

The second part is a detailed description of the adaptations to our methods courses through the shift to extensive time in the elementary school classroom.

**Description of the Residency Model and Effects on Methods Courses**

The Residency model of Ready2Teach, as implemented within our institution, includes a year-long residency in the elementary school classroom. This residency begins before the start of the fall semester with 50 hours of field placement that are refer to as pre-residency. During this time, the pre-service teacher (PST) meets with her mentor teacher before the start date of the local school district. The PSTs are expected to attend professional development meetings with the mentor teacher, assist in setting up the classroom, and be present on the first day of school when the elementary students arrive, as well as attend the entire first week of school.

The college fall semester, called the Residency I semester, involves PSTs enrolling in four methods courses, one field-preparation course, and spending 210 hours in their residency classroom. For more on the general structure of the program and sample scheduling, see Nivens (2013). The Ready2Teach redesign also allowed for the adjustment of a social studies methods course to be taught earlier and cover a broader range of content than the residency semester would have allowed (see Meier, Keith, & Dwyer, 2014).

The largest change to occur in the methods courses is the inclusion of approximately 32.5 hours of field experience per methods course in Residency 1, with four weeks of course time released to accommodate the required hours and enact a true residency. As all four methods courses do this concurrently, the PSTs spend 32.5 hours x 4 courses to meet 130 hours of their total 210-hour requirement for the semester. Essentially, each three-credit methods course functions as two credits of on-campus coursework, and one credit of applied field experiences. Table 1 shows how residency hours are acquired throughout the semester.

**Table 1. Ready2Teach residency model semester schedule**

Week #	ETSU Campus	Field Placement in Residency School
1.	M W or T R	8 hrs co-teaching (~2hrs per day, 4-5 x per week)
2.	M W or T R	8 hrs co-teaching (~2hrs per day, 4-5 x per week)
3.	M W or T R	8 hrs co-teaching (~2hrs per day, 4-5 x per week)
4.	M W or T R	8 hrs co-teaching (~2hrs per day, 4-5 x per week)
5.	M W or T R	8 hrs co-teaching (~2hrs per day, 4-5 x per week)
6.	M W or T R	8 hrs co-teaching (~2hrs per day, 4-5 x per week)
7.	M W or T R	8 hrs co-teaching (~2hrs per day, 4-5 x per week)
8.	M W or T R	8 hrs co-teaching (~2hrs per day, 4-5 x per week)
9.	M W or T R	8 hrs co-teaching (~2hrs per day, 4-5 x per week)
10.	M W or T R	8 hrs co-teaching (~2hrs per day, 4-5 x per week)
11.	Full time residency	32.5 hours co-teaching 7a.m. – 5p.m. M-F
12.	Full time residency	32.5 hours co-teaching 7a.m. – 5p.m. M-F
13.	Full time residency	32.5 hours co-teaching 7a.m. – 5p.m. M-F
14.	Full time residency	32.5 hours co-teaching 7a.m. – 5p.m. M-F
15.	M W or T R	No requirements beyond making up lost time
16.	Final Exam Week	No requirements beyond making up lost time

### **Enactment in the Mathematics Methods Course**

Early plans were to modify some assignments that were initially intended as simulations of teacher work and incorporate them within the field placement classroom. These two assignments were 1) analysis of student work/remediation plan, and 2) an assessment design project.

With the loss of coursework seat time to enable residency hours, PSTs were required to identify an elementary school student in need of remediation within the field placement classroom to which he or she was assigned. This had the advantage of helping a real student who needs assistance in mathematics learning. The difficulty from the teacher education side was in determining how to translate this into a successful completion of requirements for the course. A pilot of this modification occurred in the fall 2013 semester and was successful. In the fall 2014 semester this became a standard procedure.

A pilot process began for a second assignment in fall 2014, the Assessment Design project. Instead of designing a mathematics assessment as a simulation, PSTs worked cooperatively with their Residency I mentor teacher to design an assessment to be used with the students. The use of peer-reviewed journal articles and sources to design the assessment were discussed and researched before the four-week full residency placement occurred.

### **Enactment in the Language Arts Methods Course**

Likewise, in the language arts methods course, assignments that had previously been simply simulations of real classroom experiences were modified to incorporate actual field experiences. The two modified assignments included 1) planning of a weeklong literacy unit, and 2) close reading lesson plan and instruction.

The first assignment required PSTs to use relevant instructional materials such as a basal reading series to plan a week long unit of literacy instruction. While PSTs were able to complete the planning process prior to the implementation of the new residency model, an important element was added in the fall of 2014 to this assignment. Rather than simply simulate a week of instruction for a fictional class, PSTs were able to collect relevant data from their field placement based on assessment of student needs and confer with their mentor teacher on appropriate instructional materials and modifications for their actual classroom.

Additionally, PSTs planned a close reading lesson plan using complex text. Previously, this lesson would have been primarily a theoretical plan or at best one that was carried out with peers in the college classroom. Because of the shift to a yearlong residency PSTs were able to carry out the close reading lesson plan with a small or large group of students at their field placement site. PSTs reported the benefits of carrying out their plan with actual students as well as the importance of the reflective processes they engaged afterwards with their mentor teachers.

### **From Simulation to Actual Implementation**

The emphasis on time in the residency classroom provided opportunities for changes to be made in the Residency I methods coursework and assignment structure. In order to clearly illustrate the changes, examples are presented from both the mathematics and language arts methods courses. Because the PSTs complete the edTPA (Sato, 2014), these two content areas are most beneficial to study.

### **Mathematics Methods Example**

The main projects of the semester are analysis of student work, planning remediation, designing assessments, lesson planning, and reflective teaching. Table 2 shows what these activities looked like before the transition to the Ready2Teach model and after. Details follow the table, describing how each assignment shifted to leverage the extensive field-based hours of the residency model.

**Table 2. Mathematics methods course assignment changes**

Project	Before Ready2Teach (Prior to 2012)	Full Ready2Teach implementation (Fall 2013 - present)
Analysis & Remediation in simulation	Student work samples provided by instructor. PSTs planned a month-long plan for sample student. Content focus: 2 <sup>nd</sup> grade addition.	Student work samples provided by instructor. PSTs planned a month-long plan for sample student. Content focus: 2 <sup>nd</sup> grade addition.
Analysis & Remediation of actual student	Not applicable/No such assignment	Actual K-6 student <i>identified by PST and mentor teacher</i> , individual sample collected through a diagnostic interview and then design a month-long remediation (and optionally implement with actual student).
Assessment Design	PSTs designed an assessment on their choice of math strand and grade level.	PSTs, <i>in collaboration with the mentor teacher</i> , design and administer an assessment to their field-based students.
Lesson Planning and Reflection	PSTs planned and taught one math lesson to teach in the field	PSTs actively co-teach throughout the semester. One lesson plan required for methods course.
	PSTs reflected on the lesson after teaching it	PSTs reflected on the lesson after teaching it.

*Analysis & Remediation: Simulation*

Before the Ready2Teach program, the project entitled Analysis and Remediation was used to teach PSTs how to analyze student work and plan a month-long remediation. The instructor provided a sample of student work, and together the PSTs would analyze this sample. Their task was to identify the students' mathematical misconceptions and misunderstandings and to write about 1.5 to 2 pages of analysis. They were also to select and read 2-3 professional articles related to this student's mathematical struggles. Once a class discussion had identified the primary misconceptions, each PST designed a remediation plan for the student to be implemented over the course of one month (see Nivens & Gann, 2014).

*Analysis & Remediation: Actual Student*

With the shift to residency, the simulation project became a practice experience of something that should be implemented in an actual classroom. With the Ready2Teach program, our PSTs now identify a student in their residency field placement and administer a diagnostic interview, which they write specifically for that child as described in Ashlock (2010) and van de Walle, Karp, and Bay-Williams (2013). Following this diagnostic interview, each PST writes an analysis of that student's work sample and creates a plan of remediation to take place over four weeks. For the methods coursework, they also write a rationale for the intervention strategies and sequence selected and submit for a course grade the diagnostic interview, scanned response of student work, their analysis and remediation plan. A brief report of the outcome of their project can be turned in for PSTs electing the optional implementation of their plan. Professional articles to support the plan are required, and these articles are integrated as part of the required readings for the course.

*Assessment Design*

The assessment design project requires the PSTs to develop an assessment on a mathematics topic their students will be covering during the time of their 4-week full-time residency (weeks 11-14 in Table 1) when they are not meeting in the college classroom. The first requirement is for the PSTs to locate and read 3 peer-reviewed journal articles on the math strand their assessment will cover. Journals that are highly recommended are *Teaching Children Mathematics* and *School Science and Mathematics*. Drawing from these articles and collaborating with their mentor teacher, the PSTs design an assessment that uses the strands of mathematical proficiency (Kilpatrick,

Swafford, & Findell, 2001) as the basis for their questions. In conjunction with the assessment, the PSTs write an accompanying rationale. As an example of what the whole process looks like, Watanabe's (1996) article is a required reading. The only change that residency has had on this assignment is that our PSTs now design an assessment that can actually be administered at the mentor teacher's discretion.

### *Lesson Planning and Reflection*

The lesson planning and reflection piece is the least changed element of the mathematics methods course. Before Ready2Teach, PSTs still had some hours of field placement, primarily for observation, and they were required to teach one mathematics lesson before the end of the semester. With the transition to the residency model, this project has a wider window of when it can be completed. Typically, this project is completed during the 4-week period when the PSTs are exclusively in the elementary school classroom.

### **Language Arts Methods Example**

The main goals of the semester are instructional planning, considering modifications, using assessments and data to design instruction, and reflective teaching. Table 3 shows what these activities looked like before and after the implementation of Ready2Teach including some considerations of prior coursework. Specifics of the transitions are considered directly following the table.

**Table 3. Language arts methods course assignment changes**

Project	Before Ready2Teach (Prior to 2012)	Full Ready2Teach implementation (Fall 2013 - present)
Literacy Block Lesson Planning	PSTs planned guided reading lesson for a simulated literacy block using relevant materials. Content focus: Monitoring comprehension strategies.	Small group guided reading lesson planning moved to Junior year course work. PSTs confer with mentor teachers and collect relevant assessment data from field placement to plan a week long literacy block.
Lesson Plan Preparation and Design	PSTs design a guided reading lesson plan focusing on broad comprehension skills.	In preparation for close reading lesson in the field, PSTs analyze a fiction and non-fiction text appropriate for their grade level using the Text Complexity Rubric and collaborate with their mentor teacher to create a close reading lesson.
Lesson Plan Implementation and Reflection	PSTs carry out the lesson plan with peers in the college classroom.	PSTs carry out the close reading lesson plan with a small or large group at their field placement site. PSTs reflected on the lesson after teaching with mentor teacher and via reflection paper due to professor.

### *Literacy Block Planning Using a Field Placement Model*

With the shift to a residency model, PSTs were given the opportunity to participate in an activity which closely mirrored the actual happenings in the elementary classroom. PSTs conferred with mentor teachers to plan a week long unit of study appropriate for their particular grade level of students. They used knowledge of assessment data, curricular and supplemental materials from their site, and the guidance of their mentor teacher and professor to design five days of literacy instruction. In doing so, PSTs were required to consider not only instructional procedures, but rationale for these procedures and modifications for varying groups of learners.

### *Lesson Plan Preparation and Design*

English language arts classrooms across the country are highlighting the importance of text complexity and close reading (Fisher & Frey, 2012; Hinchman & Moore 2013). Prior to the implementation of Ready2Teach, our PSTs gained only a theoretical understanding of these concepts through scholarly articles and classroom discussion. In fall of 2014, this understanding was expanded by the inclusion of a related field component in addition to the required readings and discussion. In preparation for teaching a lesson in the field, PSTs chose a fiction and nonfiction text to analyze using the Text Complexity Rubrics used commonly in schools. PSTs then conferred with their mentor teacher to plan a close reading lesson based on a particular need in their field placement and selected a text also approved by their mentor teacher.



### *Lesson Plan Implementation and Reflection*

After collaboration with peers, mentor teachers, and their English language arts professor, PSTs carried out the close reading lesson plan with a small or large group of students at their field placement site. Afterwards, PSTs reflected on the lesson with their mentor teacher and via a reflection paper due to their professor. The addition of field hours in Residency 1 has positively impacted the reflective process in the language arts methods course. Primarily, the encouragement of conferring with their mentor teacher both before and after engaging in instruction has increased acquisition of concepts. Also, PSTs tend to share more insightful commentary in the college classroom as they are able to connect their theoretical learning with real life applications.

### CONCLUSION

While the transition to a residency model has been a “revolutionary change” in our program, the changes have provided an opportunity to enrich the education of our PSTs. In addition to changing the scope of major assignments, college course discussions can begin with the common ground of all PSTs already serving within their schools. The advantage to being in the elementary school classroom on day one of the school year cannot be overstated. By adopting a residency model, our simulation projects are now used as a monitored practice exercise before our PSTs try things out their own in both the mathematics and language arts methods courses. Moreover, since the PSTs still see their college instructors, college faculty can monitor these projects as they implement them in the elementary school classroom during the semester. With further work, these new projects can be modified to maximize the use of both course time at the college as well as residency time in the classroom.

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