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Learning and Teaching Technology in English Teacher Education: Findings From a National Study

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Abstract

This paper reports on one aspect of a large-scale nationwide study that surveyed English teacher educators about English teacher preparation programs throughout the United States. One aspect of the study focused on how technology is integrated within the context of English teacher education programs, asking the question, “As an area of emphasis in the teaching of English, how do teacher educators prepare beginning English teachers to address the teaching of technology and new literacies in the context of the English language arts?” This paper highlights the data and the findings from the self-administered questionnaire portion of the study concerned with technology use in the English language arts methods course.

Some might contend that the teaching of the English language arts (ELA) remains, at its core, a subject premised on the study of literature, composition, language, and oratory. This definition, operationalized throughout the 20th century, sets forth lenses through which the study of “English” was undertaken (Dixon, 1967). Yet, as the preparation of English teachers enters the current era, the field of ELA education has moved forward to include the teaching of the skills that cross all disciplines but are also specific to a discipline (Moje, 2008)—skills such as reading, writing, listening, critical thinking, and speaking—that are beyond the skills middle and secondary English teachers thought to be in their instructional purview before the mid-1990s (Wilson, 2011).

During the mid to late 20th century, being literate meant being proficient at reading a print text, understanding and using its information, and hand writing a response to it. Today, being literate means being proficient at reading and writing print texts as well as digital texts, media objects, codes, images, sounds, social practices, and critical perspectives and producing responses to them that are as equally diverse (Bruce & Levin, 2003; Kinzer & Leander, 2003; Swenson, Young, McGrail, Rozema, & Whiting, 2006). These all now fall under the domain of teaching English.

In his 2014 National Council of Teachers of English (NCTE) presidential address, Ernest Morrell (2015) focused on the *yesterday, today, and tomorrow* in the teaching of English and stated that English teachers need to dedicate themselves to “doing tomorrow in today’s classrooms” (p. 312), expanding the field’s understanding of teaching ELA and encouraging the field to recognize its complexity.

The teaching of multimodal literacies and technology integration into classroom practice have become integral aspects of the discipline that demonstrate how complex it has become. Both hardware and software and their products have changed literacy practices (Conference on English Education [CEE] Executive Committee, 2008) — changes that have affected the content of the ELA as well as its delivery. With many communities resorting to online learning to deliver less in-demand content, technology may even further complicate how ELA teachers instruct at the secondary level.

Morrell’s (2014) presidential address also emphasized that educators cannot extricate the political enterprise from the teaching of English; one consequence is that ELA teacher educators must account for state and national standards when planning instruction. Yet, Morell stressed that such goals must exist alongside the aims of developing powerful readers and writers, teaching for social justice, and enacting critical media pedagogy, for these remain the tenets of “teaching tomorrow” in today’s classroom.

“Teaching tomorrow” is a call to recognize the past and understand how the preparation of English teachers has changed over time. Smagorinsky and Whiting’s (1995) study *How English Teachers Get Taught*, published over 20 years ago, intended to capture a national portrait of English teacher preparation up to that period. The authors contacted over 300 English teacher educators throughout the United States and collected 81 methods course syllabi. The collected syllabi were then analyzed for organizational and theoretical approaches to the teaching of English, as well as ELA assessments and activities. Findings from the study revealed that ELA was rooted in multiple theoretical orientations, including formalism and reader response. Yet, the discipline remained traditional in the sense that it was still primarily concerned with the teaching of literature, composition, and oratory.

State and national standards had just become a topic of discussion in the decade when Smagorinsky and Whiting’s (1995) study took place; therefore, syllabi in ELA may not yet have reflected this focus. Additionally, the authors made little mention of teaching diverse

groups of students, supporting an assumption that the definition of a school subject, such as ELA, relied more on “curriculum” than it did on “instruction.” Furthermore, little to no mention was made of technology nor of its connection to ELA education in the syllabi included as samples, in the designated readings, or in the assignments submitted. Student projects were typed, paper submissions. Despite at least one syllabus requiring that practice teaching be videotaped for self-evaluation and reflection, there was no indication that this technology was taught in the methods course or might affect how ELA was studied.

Inspired by the idea that the field of ELA, as a whole, would benefit from an updated portrait of English teacher preparation, a group of English educators decided to investigate, broadly, just how the discipline of ELA has changed since Smagorinsky and Whiting’s (1995) study. We created a large-scale nationwide study that surveyed English teacher educators about English teacher preparation programs throughout the United States, asking the question, “How do we, as the field of English language arts, recognize new areas of emphasis within the discipline?”

This paper reports on one element of this study: the questionnaire. This self-administered questionnaire focused on how English teacher educators viewed recent changes in English teacher preparation and how these changes affected their work.

One aspect of the questionnaire focused on how technology is integrated within the context of English teacher education programs, asking—as a new area of emphasis in the teaching of English—how teacher educators prepare beginning English teachers to address the teaching of technology and new literacies in the context of the ELA. This paper highlights the findings from this aspect of the national study.

Teaching Technology and New Literacies in the ELA Methods Course: An Overview

The impact of technology in contemporary lives has moved English instructors to consider new literacies (CEE Executive Committee, 2008; NCTE Executive Committee, 2013; Swenson et al. 2006; Yagelski 2005), ones that encompass reading not only print texts but also digital texts, media objects and the people to whom they refer, social practices, critical perspectives, and other situational instances that require meaning-making strategies (Bruce & Levin, 2003; Kinzer & Leander, 2003; Merkley, Schmidt, & Allen, 2001; Pasternak, 2007). For ELA instructors and the teacher educators who prepare them for today’s classrooms, this phenomenon prompts the question: When educating English instructors to support their own students to become literate members of society, what new literacies, new media, and technologies integrate effectively into classroom practices?

This question underscores much of the research in the study of ELA education and is predominant when searching the “Annual Annotated Bibliography of Research in the Teaching of English.” Originally published annually in print each November in the journal *Research in the Teaching of English*, the bibliography has expanded from 15 pages in 2003 to its most current version of 49 pages (in 2010, the bibliography grew to 88 pages, its most extensive yet).

The breadth of the bibliography has required the journal to exclusively publish it online. Its expansiveness has much to do with the increased numbers of studies that explore technology’s impact on the teaching of English (Beach et al., 2010). Nonetheless, the abundance of studies that address technology and the ELA rarely considers how technology is integrated into the ELA methods course or across programs to prepare future teachers of English (Pasternak, Coughlan, Hallman, Renzi, & Rush, 2014).

Recent studies in technology and the teaching of ELA can be divided into two groups: (a) technology that “opens” spaces for collaborative learning, such as wikis, blogs, discussion boards, and online tutoring; and (b) technology that “closes” spaces to support individualized learning or assess that learning, such as desktop applications, e-portfolios, and multimodal and multimedia software. In both these situations, students learn technology to understand the content of the ELA. Moreover, instructors become responsible for teaching students to “develop proficiency and fluency with the tools of technology” (NCTE Executive Committee, 2013, para. 2). Thus, technology not only supports the learning of the traditional content of the ELA (literature, composition, language, and oratory) but also becomes content when the software and/or hardware must be learned to engage the content traditional to the field.

Studies that address using technology for collaborative purposes, what we labeled in the questionnaire as open technology (e.g., Dymoke & Hughes, 2009; Garcia & Seglem, 2013; Houge & Geier, 2009; Lee & Young, 2010; Matthew, Felvegi, & Callaway, 2009; Ryan & Scott, 2008), explore how literacy practices changed by creating or engaging in certain activities such as online tutoring, but rarely address how these practices were maintained across programs or how the practices learned in them were adopted into the teacher candidate’s own instructional practices.

Likewise, studies that support individualized learning or assessment practices, what we labeled in the questionnaire as closed technology (e.g., Carlson & Archambault, 2013; Chung & Van Es, 2014; Figg & McCartney, 2010; Lai & Calandra, 2010; McVee, Bailey, & Shanahan, 2008; Ortega, 2013; Schieble, Vetter, & Meacham, 2015; Seo, Templeton, & Pellegrino, 2008), explore the efficacy of an application, although it was not always clear whether the technology learned occurred in the ELA methods course or in a stand-alone, cross-content technology class.

As apparent from the range of studies conducted over recent years, the integration of technology into ELA instructional practice is an increasingly important area of emphasis that warrants the field’s attention. The following sections overview our National Study on the Preparation of English Teachers for Secondary Classrooms and then describe how responses to the questionnaire specifically aim to capture English teacher educators’ understandings of the ways English teacher preparation programs address learning to teach with and about technology and new literacies.

The National Study on the Preparation of English Teachers for Secondary Classrooms

The National Study on the Preparation of English Teachers for Secondary Classrooms included multiple components:

1. A contact list of English educators across the US.
2. A current literature review of studies of ELA methods courses.
3. A self-administered, 90-question, fixed, multiple-choice questionnaire with five randomized open-ended questions.
4. A collection of subject-specific ELA methods course syllabi that were voluntarily submitted by questionnaire respondents.
5. Focus group interviews of English educators who submitted syllabi.

The study began with the completion of a literature review as a way to ascertain the current state of scholarship related to teaching ELA methods (Pasternak et al., 2014). In delineating new areas of emphasis in the teaching of ELA, we used a collection of position

papers developed in 2005-2006 by the CEE, the English teacher education community of NCTE. These foundational papers represent the voice of the field of English language arts. From these resources and our experiences with salient policy and legislation, we identified five key topics of focus for change in ELA:

1. Field experiences and their relationship with the ELA methods course,
2. Preparing teachers for racial, cultural, and linguistic diversity,
3. New technologies and new literacies in English education,
4. Content-area literacy requirements, and
5. K12 content standards and associated assessments.

We then constructed a questionnaire that was electronically distributed to English teacher educators throughout the United States. The questionnaire included multiple-choice and open-ended questions (as recommended in Sheehan, 2001); the entire questionnaire consisted of 90 questions in four sections but included skip questions so that most respondents did not have to answer all questions. Additionally, five randomized open-ended questions were included that were designed to gather data on English education programs' responses to our focal areas. The survey took 20-45 minutes to answer, depending on the nature of one's program(s) (Blair et al., 2014; Groves, Cialdini, & Couper, 1992, Weisberg, 2005). We addressed construct validity in two ways: through piloting the survey and through reliance on multiple sources in the larger study. For the pilot, we sent the questionnaire to 17 teacher educators representing a variety of program types around the country. In response to their comments, we rewrote questions, dropped those that were too confusing, and added ones deemed necessary from respondents' remarks.

An aim of the nationwide study was to provide a holistic understanding of how English teacher education programs were situated within their respective institutions. Another focus of the questionnaire was to articulate how English teacher educators throughout the country viewed the five defined areas of emphasis as present within the English education programs in which they taught. In the nationwide study, we emphasized the importance of the subject-specific methods course. The following definition of the subject-specific methods class was implemented throughout the study:

A subject-specific methods course primarily focuses on the representation and teaching of ELA content. A methods course often also involves inquiry into the beliefs or opinions of participants regarding concepts of ELA at the secondary level, the planning of lessons or courses of study, and classroom management related to content-specific methods. Courses providing background in English content for teacher candidates should not be regarded as methods courses if the focus is not on how to teach that content.

The subject-specific methods course was viewed throughout the questionnaire as a context in which teachers learn to understand their subject matter through a disciplinary perspective, as their students experience it, with an aim of guiding their students toward relevant academic performances (as in Darling-Hammond & Bransford, 2005).

When designing the survey, we discerned that many teacher education programs included coursework in the five new areas of emphasis of teaching English language arts. Yet, we found little scholarship—with the exception of the integration of technology—indicating that the identified five new areas of emphasis of teaching English were, indeed, included in ELA methods courses (Pasternak et al., 2014).

Most research since 1995 about what English teacher candidates encountered in ELA methods courses centered on effective methods of teaching specific ELA content,

developing an identity as an English teacher during the preservice period, and examining the methods course as a context or in the context of a larger program (Pasternak et al., 2014). Moreover, most studies lacked a national or regional scope and were focused on teacher education programs as they resided in their specific local contexts.

We developed a contact list of English educators and English teacher certification programs across the United States, as none was available. The questionnaire was distributed to English educators across the United States via email. Through the Title II report and state program lists, 1,085 public and private colleges and universities in the United States that certified English teachers were identified. We electronically distributed 942 surveys to English teacher educators across the United States; 250 responses from 234 distinct institutions were received.

Frequency data were tabulated for all questions, and variables were added for “check all that apply” categories to gauge the number of options chosen. Tables were created to compare the answers to each question across groups. In the remaining areas, frequencies were computed using the Multiple Response tool in SPSS, allowing us to account continually for changing numbers of respondents. Open-ended responses were coded inductively, with each survey author taking responsibility for particular sections of the survey. Open-ended responses were not double-coded and were primarily used to illuminate the quantitative results and to expand the possible categories for analysis for later stages of the larger research project.

Technology Instruction and Learning in English Teacher Education

This paper is specifically concerned with the data on technology use in the ELA methods course. When examined in relation to the explosion of published studies about technology’s impact on the English language arts (Beach et al., 2010), technology usage in changing communication practices has been profound. This effect can be observed by charting recent changes to the ELA content standards.

In their review of the impact of the journal *Contemporary Issues in Technology and Teacher Education*, George, Pope, and Reid (2015) observed that technology usage was addressed in three indicators of effective practice in the NCTE’s (1997) content teacher standards, with its emphasis exponentially increased over the years in updated versions. By 2012, the standards “saw the integration of contemporary literacies and contemporary technologies on such a regular basis that it seems safe to say that technology has been part of the ELA discipline itself, not just a tool for teaching and learning” (p. 9). George et al. concluded that the ability to read and compose multimedia texts has become as foundational to ELA as the study of literature, composition, language, and oratory.

As technology continues to impact modes of communication, English educators must prepare ELA teachers to “integrate, infuse, and implement it in [their] classes” (George et al., 2015, p. 9). Most K-16 students use some type of technology to communicate, navigate a school’s infrastructure, participate in instruction and school communities, and learn a discipline’s content knowledge and its impact on transforming that knowledge (Gorgina & Hosford, 2008). Therefore, when technology is integrated into a teacher education discipline or program, the technology must make sense to the learning of conceptual knowledge, procedural knowledge, and attitudinal and value-based knowledge specific to that discipline (Guzman & Nussman, 2009). In this way, technology should be a tool for learning (Gorder, 2008; Harris, Mishra, & Koehler, 2009) that supports instructional practices (Ertmer, 2005) and is integral to the learning process (Pierson, 2001).

Findings and Discussion

Research on technology and the teaching and learning of the ELA is significant (Pasternak et al., 2014), especially in terms of the ways technology affects literacy practices. Technology is recognized as essential content in the ELA methods class; the ways it is integrated into teaching practices, as well as the ways it has changed communication practices, is of significant interest to the field. Much of the research conducted in this area examines the efficacy of employing technology in classroom practices rather than its application in the methods classroom, although a notable number of studies explore this work with preservice teachers (e.g., Carlson & Archambault, 2013; Lee & Young, 2010; Ortega, 2013; Pasternak, 2007).

Technology: Essential Content in ELA

The interest in examining technology and the ELA is consistent with the findings from the survey indicating that English educators find technology integration and the understanding of multiple or new literacies as the most essential “other” content that should be taught in the subject-specific methods class. Respondents were given the following choices when asked, “What elements do you consider essential to a methods course in a subject area (in other words, which of these topics must be included in a content specific methods course)? Please choose all that apply:”

- Lesson and unit planning,
- Classroom management,
- Subject matter,
- Pedagogical content knowledge,
- Teaching philosophy
- Assessment practices,
- Micro-teaching,
- Teaching methods and materials,
- Other, please specify.”

Respondents listed technology integration most often in the section for “other” (16%).

The understanding that technology learning is important to the ELA was mirrored in responses from the question, “How do programs address the rapidly changing communication and information technology in teaching and the workplace?” Respondents, across all certification levels (bachelor’s, post-baccalaureate, master’s and alternative programs), indicated that technology was integrated across their programs and coursework, as opposed to being taught in isolated instances in a standalone course or handled through readings (see Table 1).

As the survey did not provide a definition for the “integration of technology” for the respondents, we are not sure how they defined this term. Exploring how educators define technology integration seems a topic worthy of further investigation. The findings from the open-ended question responses that varied widely indicate that respondents were often unsure how or who was responsible for teaching and integrating technology across an ELA program if that content was taught by either the English or education instructional staff and the respondent was from the other department or school. Despite the lack of specificity as to the meaning of integration, respondents were much more likely (46%) to reply that technology was integrated across a program than to claim it was being addressed in a separate class that taught discrete technology skills for specific purposes (27%).

Table 1
Survey Question Responses: "Where Are Changes in Technology Addressed?"

Where Addressed	Bachelors	Post-Bacc	Masters	Alt. Cert.
Not Addressed	4.02	4.44	7.69	8.33
Separate Coursework	27.59	26.67	23.08	33.33
Integrated Throughout	44.83	46.67	48.08	45.83
Methods Course	22.41	19.26	17.31	8.33
Field Experiences	1.15	2.96	3.85	4.17
EC Activities	0.00	0.00	0.00	0.00
Total Responses	174	135	104	24

Note: In percentages; missing data omitted

When respondents were asked if the methods course covered technology integration in the teaching and learning of ELA, some consistency appeared across two types of technology taught to preservice teachers as defined by the survey: a) technologies that promoted open spaces for collaborative, active learning environments and (b) technologies that were used in closed spaces for discrete assessment purposes or for individualized learning (see Table 2).

Table 2
Survey Question Responses: "How Do Methods Courses Address Using Digital Technologies in Teaching and Learning?"

How Addressed	Responses
Open technologies (e.g., wikis, blogs, online tutoring)	
To Learn	74.0%
Design Lessons for Course	63.5%
Design Lessons for Field	43.5%
Median Options Chosen	2
Closed technologies (e.g., portfolios, multimodal software)	
To Learn	75.1
Design Lessons for Course	67.1
Design Lessons for Field	49.7
Median Options Chosen	2

Note: $n = 177$; values as percent of respondents who chose each option (who were instructed to "check all that apply").

Respondents indicated that both collaborative (open) technologies and discrete technologies (closed) were used by teacher candidates to learn the content of the methods course, while somewhat fewer in each category had teacher candidates design lessons using technology to teach ELA content. The expectation that teacher candidates would employ

technology in their own teaching and learning once in the field dropped substantially (see Table 2). Although technology was used to learn ELA instructional practices in a course, the frequency of use dropped when teacher candidates were asked to incorporate it into their own lessons or for their field placements.

Technology Integration: Inconsistent Content in ELA Teacher Education

A number of different factors may have affected the decrease in the ways technology was employed for teaching and learning in ELA programs (see Table 2). Teacher educators vary in their conceptions of the teaching of English. Teasing out the reasoning for using technology to learn content but not to teach content is worthy of further exploration. We expect to clarify this observation in the syllabi and focus group stages of the study. In the open-ended questions about technology learning, some respondents expressed that technology should be hands-on and practical, yet others described either their universities' or local schools' lacking access to high-quality technology; therefore, using technology to teach content was superfluous under these conditions.

The number of respondents to the technology questions was considerably lower (around 175) when compared to the other four key topics focused on in the study, where the response rate was consistently around 200. This lower number of responses may have been due to respondent confusion in the survey language referring to collaborative technology as open and discrete technology as closed, although this confusion was not evident during the piloting of the study. The lower response rate may also be more indicative of the respondents having less knowledge about technology trends than they did with the other four key focus topics of the questionnaire.

When asked which technology standards the respondents used to integrate technology into preservice teacher learning, the response was NCTE/NCATE (63%), closely followed by state standards (58%). (See Table 3.) At the time the questionnaire was administered, the National Council for Accreditation of Teacher Education (NCATE) had not yet merged with the Teacher Education Accreditation Council (TEAC) to create CAEP (Council for the Accreditation of Teacher Preparation). We are unclear how the merge impacted the alignment to specific national standards. It is not unreasonable, however, to think that programs that adhered to NCATE would adhere to CAEP standards after the merge.

Thirty-five percent of the respondents indicated that they followed no standards when asking teacher candidates to integrate technology into their instructional practices, illustrating a need to investigate the reasoning behind and influences for standards adoption in this and other areas. The high ratio of requiring no technology standards in teaching and learning is a significant finding when considering that the national ELA teacher standards have increased expectations for English teachers to be proficient in their teaching through and with technology with each revision of the standards since 1997 (George et al., 2015). Additionally, the number of respondents to the technology integration question about standards dropped to 146 (from 177 for the other technology questions). The drop in respondents may be a significant finding that needs further exploration to determine if they chose not to reply at all to this question instead of indicating that no standards were required.

Table 3
Technology Standards Used in English Methods Classes Frequency Table ($n = 146$)

Response	%
No Technology Standards Taught	35.6
State Teaching Standards	58.9
NCTE/NCATE Teaching Standards	63.7
NCTE 21st-Century Literacies	15.1
NETS-T	23.3
NETS-S	12.3
<i>Note:</i> Values as percent of respondents who chose each option (who were instructed to "check all that apply"). Question: "Which technology integration content standards do your students learn and apply?"	

Findings from the open-ended question, "What is your understanding of how the English language arts methods course should address the integration of technology in the English language arts?" revealed opposing opinions about the value of integrating technologies into ELA. Some respondents assumed students were already heavily using technology in their subject area courses or presumed that, since technology was pervasive in teacher assessment and certification practices, it was out of their purview to augment that learning.

E-portfolio assessment seemed standard to the field, and respondents expressed a strong commitment to 21st-century technologies as part of the ELA curriculum; for example, "Technology skills are an integral part of 21st century skills and, consequently, an important part of our ELA methods classes." The extent and direction of commitment to teaching with and through technology was reportedly related to an instructor's expertise and comfort with technology. Some respondents indicated that they were unsure exactly where technology learning occurred in their programs: some expressed that since they were housed in an English department and the program was housed in an education department, or vice-versa, they had no idea where technology was taught.

Respondents reported that the availability and use of technology was often differentially distributed between the university and K12 settings, with one respondent observing, "The public schools tend to have more technology money than the university does, so we struggle with this"—presumably "this" being staying current with technology. Conversely, other respondents felt their students were well-equipped to use technology but, as one respondent said, "Seeing more current practices in local schools that address teaching ELA with technology would be helpful."

Observations about the corporatization of technology in schools and universities for teaching and learning—from the use of standardized assessment applications that are domain specific to the purchase of teacher-proof computerized lesson modules or reading programs—challenged what educators know about the ELA and technology integration. These topics will be examined in more depth in the focus group stage of the study.

The Teaching and Learning of Technology Within the Field of ELA Education

The study and teaching of the ELA has changed from a field that defined itself through the teaching of literature, composition, and oratory (Dixon, 1967) to one that now instructs in the skills needed to study that content: reading, writing, listening, speaking, and critically

thinking (Moje, 2008). How will the teaching of technology and its interrelationship within the ELA continue to change the field?

The teaching and learning of technology is regarded as essential other content in English. Over the last 30 years, national ELA teacher standards have expected ELA teachers to show increased proficiency in its application to the ELA content. Technology is inconsistently used to learn ELA instructional practices in the methods course; however, teacher candidates use it even less frequently in their field and student teaching placements. The availability of technology in higher education, as well as in school districts, continues to be problematic and dependent upon a community's commitment to it.

In preparing English teachers for what Ernest Morrell (2014) called "doing tomorrow in today's classrooms" (p. 312), the field has yet to determine whether technology integration will support or complicate how the discipline is defined and the degree to which it will impact English teacher preparation. Technology is already changing the understanding of content in the ELA classroom. The analysis of the syllabi and focus group stages of this study will bring us closer to a portrait of what technology integration looks like in specific ELA programs.

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