

## Review of Research in Education

### Teaching Academically Underprepared Postsecondary Students

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### Abstract

Only 25-38 percent of secondary education graduates in the U.S. are proficient readers or writers but many continue to postsecondary education, where they take developmental education courses designed to help them improve their basic academic skills. However, outcomes are poor for this population and one problem may be that approaches to teaching need to change. This chapter discusses approaches to the teaching of academically underprepared postsecondary students and how teaching might be changed in order to improve student outcomes. A wide variety of approaches is reported in the literature, including teaching of discrete skills, providing strategy instruction, incorporating new and multiple literacies, employing disciplinary and contextualized approaches, using digital technology, and integrating reading and writing instruction. However, the field has yet to develop a clear theoretical framework or body of literature pointing to how teaching in this area might improve. Based on our reading of the literature, we recommend directions for future research that could inform changes in the teaching of underprepared students at the postsecondary level.

### Introduction

This chapter aims to identify ways in which the teaching of academically underprepared postsecondary students might be changed in order to enhance learning opportunities. The population of interest is students in postsecondary education with reading and writing skills below the level required for meaningful learning. Educational outcomes for this population are poor in terms of skill development, academic achievement, and persistence (Bailey, Jeong, & Cho, 2010; Perin, Bork, Peveryly, & Mason, 2013; Perin, Lauterbach, Raufman, & Santikian Kalamkarian, 2017).

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Strong literacy skills serve as a foundation of learning from early elementary grades through postsecondary education. However, in the United States, only 38 percent of students in the last year of secondary education are proficient readers, 25 percent are proficient writers, and 28 percent display low reading skills (National Assessment of Educational Progress (NAEP), 2015a; National Center for Education Statistics, 2012).

In the United States, underprepared postsecondary students may be referred for supportive courses and services designed to help them improve their literacy and mathematics skills and become familiar with academic expectations. These supports are referred to as “developmental education,” which has been defined as “a comprehensive process that focuses on the intellectual, social, and emotional growth and development of all students. Developmental education includes, but is not limited to, tutoring, personal/career counseling, academic advisement, and coursework” (National Association for Developmental Education, n.d.). Developmental courses are often offered at several levels, with students placed based on assessments administered upon college entry. In this chapter, we focus on postsecondary developmental education in postsecondary institutions coursework and interventions designed to improve reading and writing skills.

Course taking rates vary by type of institution, with an estimated 5.6-28.1 percent of students in public 2- and 4-year institutions taking at least one developmental reading or writing course (Chen, 2016; Skomsvold, 2014, Table 6.2). Enrollments in these literacy courses are higher in community (2-year) colleges. For example, 28.1 percent of 2-year compared with 10.8 percent of 4-year college students enroll in developmental reading or writing courses (Chen, 2016, Table 1). In fact, college policies vary considerably regarding whether students found to be academically underprepared upon college entry are actually required to enroll in

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developmental education courses. For this reason, enrollments may be an underestimate of underpreparedness, as many students referred to developmental education elect not to attend but, rather, enroll in college-level courses instead (Perin & Charron, 2006).

Outcomes for entering postsecondary students identified as academically underprepared have been poor, as measured in rates of course completion, persistence in college, grade point average and degree attainment (Bailey et al., 2010), especially for students of color. For example, a majority of Latinx students do not progress beyond developmental coursework (Acevedo-Gil, Santos, & Solórzano, 2014) and, further, the lower Latinx students are placed in the developmental English course sequence, the lower the likelihood of success in credit-bearing English classes (Acevedo-Gil, Santos, Alonso, & Solorzano, 2015). Although there are multiple causes of the poor outcomes (Cohen, Brawer & Kisker, 2013), there have been calls for improvement of developmental instruction:

Little is known about what really goes on in developmental education classrooms, and even less is known about the attributes of effective teaching for this population. Principles of adult learning are often poorly understood by developmental education instructors, who are typically not offered professional development opportunities by their employers. Evidence-based instructional strategies used in high schools could be readily adapted for community colleges. Professional development for instructors and curricular reforms may be needed (MDRC, 2013, p. 2).

Observations of developmental education classrooms have been reported for example by Norton Grubb and colleagues (Grubb, 2012; Grubb & Grabriner, 2013; Grubb et al., 1999, in California), but these have been confined to single states, and more wide-ranging, systematic observational studies are needed. Lack of preparedness for postsecondary academic demands is

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3 problematic for many students. However, efforts to prepare secondary education graduates for  
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5 the literacy demands of postsecondary education indicate the difficulty of achieving this goal.  
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7 For example, in a rare study reporting evidence bearing on this problem (Kallison, 2017), even  
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9 after improving skills in an intensive high-school-to-college transition program that taught to  
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11 state reading and writing standards, a group of underprepared secondary education graduates  
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13 remained unready for college literacy demands.  
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### 16 17 **Purpose and Questions** 18

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20 There are many factors that underlie academic difficulty. The current chapter sets out to  
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22 understand one of these factors, approaches to teaching. Our purpose is to identify ways in  
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24 which the teaching of academically underprepared students in postsecondary education might be  
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26 changed in order to enhance students' learning opportunities. Based on available literature, we  
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28 identify strengths and shortcomings of current approaches to teaching in postsecondary  
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30 developmental settings in order to present directions for research and practice in instructional  
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32 improvement. Three questions guide the review our discussion: (1) What approaches to the  
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34 teaching of literacy skills to postsecondary students have been reported in the literature? (2)  
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36 What ideas have emerged in the field concerning the improvement of teaching literacy skills to  
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38 this population? (3) What implications can be drawn from the available literature for research  
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40 and practice on improving the teaching of literacy skills to this population?  
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45 For context, we first present a conceptual framework for understanding reading and  
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47 writing instruction and discuss the competencies needed in each area. We then summarize our  
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49 identification of literature and proceed to a discussion of the research. Finally, we present  
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51 implications and future directions for research and practice bearing on the teaching of  
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53 underprepared postsecondary students.  
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### Conceptual Framework

For the current purpose, literacy is conceptualized as the reading and writing of printed words in order to comprehend and express meaning. We acknowledge broader definitions, such as those that extend beyond the processing of print to the oral skills of speaking and listening (National Governors' Association and Council of Chief State School Officers, 2010), use of multi-media (Gee, 2012; Guzzetti & Foley, 2018; Mannion & Ivanic, 2007; Mulcahy-Ernt & Caverly, 2018), and, even more broadly, to social functioning, goal achievement and the development of personal knowledge and potential (White, 2011). However, because literacy coursework for underprepared postsecondary students centers on the reading and writing of print, we assume the narrower definition here. Traditionally, reading and writing have been taught to underprepared postsecondary students in separate courses but, more recently, in a growing number of colleges, developmental education has been reformed to combine the two areas in single courses (Bickerstaff & Raufman, 2017). In this section, we present a conceptual framework for understanding reading and writing, and their integration.

#### Reading

Reading is multidimensional, goal directed, and developmental (Alexander, 2005, 2012) and involves multiple cognitive, metacognitive, affective, and sociocultural factors working in concert (Holschuh & Lampi, 2018; Pearson & Cervetti, 2015). Layered within each of these factors are other multidimensional constructs. For example, cognitive factors include decoding, predicting, comprehending while affective factors include motivation, self-efficacy, and self-regulation. All of these processes occur within social, cultural and contextual spaces, which favors those who understand academic discourse (Gee, 2012). Reading ability develops over time and involves both learning to read and reading to learn (Alexander, 2012; Rosenblatt,

1994). Learners develop flexibility, control, and experience to maneuver within the linguistic, cognitive and sociocultural dimensions of literacy (Kucer, 2014).

Reading is developmental across the lifespan and readers bring a variety of strategies, interests, and background knowledge to the text and that making meaning demands the ability to critically analyze and interpret text (Alexander, 2012). In this sense, reading proficiency may not generalize to specific disciplinary areas that demand a good deal of content knowledge (Perin, 2018).

Key reading competencies include understanding literal and implied information in text, drawing appropriate inferences and conclusions; identify and summarize main ideas; analyzing information as it unfolds over a text; interpreting the meanings of words and phrases; analyzing text structure; understanding the purpose or point of view expressed in a text; making connections between text and their own experience; comprehending information in diverse formats and media (i.e. engage in multiple literacies, as mentioned above); assessing arguments expressed in a text; comparing information across texts; analyzing an author's use of literary devices; and understanding complex texts (National Assessment of Educational Progress, 2015b; National Governors' Association and Council of Chief State School Officers, 2010).

### **Writing**

Writing has been conceptualized as comprised of two components, called “the task environment” and “the individual” (Hayes, 1996, p. 10). The task environment encompasses social aspects such as the purpose of writing and characteristics of the readership of a written text, and physical aspects including the medium, e.g., pen and paper or digital means, and the text written so far, which provides context for the writing for further composition. In the “individual” component are housed key cognitive and affective processes including memory,

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3 schema for the act of writing; metacognition; understanding of core writing behaviors (planning,  
4 drafting and revision); beliefs about writing; and motivation to write. An extension of Hayes'  
5 (1996) model includes executive functions in the self-regulation of the writing process, and the  
6 use of writing strategies (Berninger, Garcia, & Abbott, 2009)  
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12 Skills and processes that enable proficient writing are spelling, which requires phonemic  
13 awareness and the mapping of sounds and letters; knowledge of the conventions of a written  
14 language, including syntax, capitalization and punctuation; and vocabulary knowledge  
15 (Berninger & Chanquoy, 2012; Rijlaarsdam et al., 2012). Also important is discourse knowledge,  
16 i.e. awareness of the characteristics of and what is involved in producing well-written text  
17 (Olinghouse & Graham, 2009).  
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26 Key writing competencies include the ability to compose text in three major genres, i.e.,  
27 argumentative/ persuasive, informational/ explanatory, and narrative; use precise language and  
28 varied sentence structure; produce coherent text that demonstrates an awareness of the  
29 informational needs and basic assumptions of an assumed audience of readers; revise one's own  
30 text to improve clarity; use digital technology such as the internet to communicate and  
31 collaborate with others; engage in multi-modal, non-print literacies in line with evolving  
32 practices in the 21<sup>st</sup> century; convey research findings; acknowledge the source of ideas, i.e.  
33 avoid plagiarizing; and engage in both longer- and shorter- term writing tasks (Guzzetti & Foley,  
34 2018; Mulcahy-Ernt & Caverly, 2018; Paulson & Holschuh, 2018; National Assessment of  
35 Educational Progress, 2012; National Governors' Association and Council of Chief State School  
36 Officers, 2010).  
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**Integrated Reading and Writing**

The integration of reading and writing instruction seems well supported from both theoretical and empirical perspectives. Reading and writing are not the reverse of each other (Stotsky, 1983) but share a number of important overlapping processes (Fitzgerald & Shanahan, 2000). Shanahan (2016) describes relationship between reading and writing as “two buckets drawing water from a common well or two buildings built on a common foundation” (p. 195). Further, two meta-analyses have shown mutually-beneficial empirical relationships between reading and writing (Graham & Hebert, 2010; Graham et al., 2018).

### **Identification of Literature**

The ProQuest, ERIC, EBSCO and Google Scholar search engines, hand-search of journals, and reference lists in identified literature were used to generate an initial pool of studies for consideration. Search terms, used singly and in combination, were: developmental education, remedial\*, college, postsecondary, higher education, literacy instruction, reading instruction, writing instruction, reading skills, writing skills, integration, and integrated reading and writing. Resources meeting the following criteria were selected for review: (1) provided description, practitioner commentary, and/or data on the teaching of literacy skills to underprepared students in postsecondary education; and (2) appeared in peer-reviewed journal articles, chapters in scholarly books, or technical reports produced by reputable organizations. A parameter of the years 2000-2018 was set but a few earlier references were screened in because they offered important information not available in more recent work. The search yielded 199 studies, which were scrutinized for relevance to the current review; of these, 36 were relevant to our guiding questions. The identified literature included empirical studies, descriptive reports and literature reviews. The work was organized by major theme, as shown in the next section. Where studies were thematically cross-cutting, they are presented below within a single theme for expediency.

The large majority of studies identified were not designed as evaluations, and thus did not report outcome data. Where evidence of effectiveness is reported, we include it in our discussion.

### **Teaching of Literacy to Underprepared Postsecondary Students**

#### **Overview**

The purpose of developmental reading and writing courses is to increase the proficiency of college students who are underprepared for college level literacy (Paulson, 2014). Increasing the effectiveness of these courses is tied to pedagogical choices (Paulson & Holschuh, 2018). Although developmental educators use a variety of teaching approaches, two major approaches, discrete skills and meaning making, have been defined in the literature on teaching literacy to underprepared adults (Beder, Lipnevich, & Robinson-Geller, 2007; Perin, 2013). Though it has been claimed that many developmental education courses use a decontextualized, discrete skills approach (Grubb, 2012; Lesley, 2004; Weiner, 2002), and that when skills are taught in this way, there is little use of authentic reading materials or literacy strategies (Rose, 2005), there have been few systematic analyses of instruction in developmental classrooms or comparisons of outcomes of different teaching approaches.

One curriculum analysis found that developmental reading classes using discrete, decontextualized skills instruction may focus on finding the main idea, inferencing, examining paragraph structure while using workbook-style textbooks that feature mostly narrative text examples (Armstrong, Stahl, & Kantner, 2015). Textbooks used in these courses center on such skills, which are typically taught in isolation (Perin, 2013). This kind of “transmission” approach can lead students to use passive, surface-level strategies, to be unable to view reading as a conversation with the text, and to have difficulty adapting their reading strategies to the variety of task demands of college (Armstrong & Newman, 2011).

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3 Courses using a meaning-making approach focus on problem solving and critical  
4 thinking using real-world examples and text (Perin, 2018), which may help students succeed by  
5 increasing their strategic cognitive, metacognitive, and affective approaches to learning  
6 (Holschuh & Lampi, 2018; Simpson, Stahl, & Francis, 2004). Being able to use cognitive  
7 strategies such as analyzing and synthesizing text can enable students to further develop  
8 metacognitive approaches such as self-questioning, self-regulation, and self-monitoring  
9 (Alexander & Jetton, 2000; Holschuh & Lampi, 2018; Zimmerman, 1995). We now discuss the  
10 various teaching approaches found in review of the literature.  
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22 In this essay, we organize our discussion according to the themes of teaching discrete  
23 literacy skills, strategy instruction, new and multiple literacies, disciplinary and contextualized  
24 approaches, digital technology, and integrated reading and writing.  
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### 29 **Teaching of Discrete Literacy Skills**

30 Instruction in discrete skills refers to the teaching aspects of literacy such as vocabulary  
31 definitions, morphological structure of words, or “getting the main idea” without relating them to  
32 each other or to meaningful acts of written communication. In this approach, teachers may assign  
33 repetitive drills using pre-prepared worksheets. It is difficult to determine the extent of discrete  
34 skills instruction in developmental education from the research literature but, given that it has  
35 been claimed to be widespread (Grubb & Gabriner, 2013), it is surprising that only three studies  
36 of this approach have been conducted (Ari, 2015; Atkinson, Zhang, Phillips, & Zeller, 2014;  
37 Curry, 2003).  
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49 Ari (2015) examined the effects of two reading fluency interventions, wide reading and  
50 repeated reading. Instructional materials consisted of binders with printed materials. The  
51 readings were 400 words long, which is not representative of the longer length of text typically  
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3 assigned and were not connected to the kinds of topics students encounter in postsecondary  
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5 education. Students in the wide reading condition silently read four different grade-level  
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7 passages and students in the repeated reading condition read one grade-level passage four times.  
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10 Participants displayed gains on reading speed, but not comprehension, which suggests that  
11  
12 multiple readings without further strategic processing are insufficient for comprehension gains.  
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14         Atkinson, Zhang, Zeller, and Phillips (2014) found that 5 weeks of word study instruction  
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16 improved the orthographic knowledge of developmental reading students. Explicit teaching was  
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18 provided in spelling rules, suffixes, and past tense endings, using word sorts and word hunts and  
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20 was designed to meet the specific needs of the participants based on their pre-test performance.  
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22 The researchers found improvement in students' orthographic knowledge despite the short  
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24 duration of the intervention.  
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28         An ethnography of a basic writing classroom in which discrete writing skills were taught  
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30 was conducted by Curry (2003). The students were English language learners and the teacher  
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32 taught skills such as, sentence-level writing, grammar, punctuation and simple one-paragraph  
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34 writing. Students were asked to write an essay and a 3-5 page research paper on self-selected  
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36 topics. All writing assignments were brief and none of the instruction observed by the researcher  
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38 was related to the kinds of extended writing students would encounter in college coursework.  
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42         Two possible explanations for the lack of research on discrete skills instruction with  
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44 academically underprepared postsecondary students are that this approach is assumed to be  
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46 effective and thus not worth studying, or, from an opposite viewpoint, that discrete skills  
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48 instruction is so damaging that it is not worth the effort to measure its (lack of) effectiveness.  
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50 Ultimately, given the criticisms of discrete skills instruction (Grubb & Gabriner, 2013), in future  
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52 research, this approach could serve as a control condition to be measured against more  
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innovative approaches, analogous to the use of conventional grammar instruction in studies of writing interventions in which the teaching of grammar has been used as business-as-usual control and found in several studies to be ineffective (Graham & Perin, 2007).

### **Strategy Instruction**

Strategy instruction involves explicit, structured teaching of specific steps for comprehending or composing text. Key components are teacher modeling and the use of graphic organizers and mnemonics to support metacognition and self-regulation. An underlying theme of strategy instruction is the gradual release of responsibility, with fading of scaffolding until the student reaches designated literacy goals (Harris, Graham, Mason, & Friedlander, 2008; Pearson & Gallagher, 1983; Walker, 2012). Studies examining particular reading and writing strategies have reported largely encouraging results.

A strategy using the PLAN (Predict, Locate, Plan, Note) mnemonic reported by Caverly, et al. (2004) focused on the selection of information while reading and involved gradual release of responsibility. Teaching began with instructor modeling and ended with students transferring the strategy to a different context. Instruction included explicit teaching of the components of PLAN, i.e., strategic reading strategies, metacognitive awareness, self-efficacy, recognizing text structure, and rehearsal strategies for recall. Teachers modeled the strategy using think-alouds with authentic text and supported student practice as a means to help students develop the skills to use the strategy independently in other college courses. The researchers reported increased scores on a standardized test of reading performance and comprehension and the likelihood of the use of the strategy in other contexts.

Armstrong and Lampi's (2017) PILLAR (Preview, Identify, List, Look online, Attempt, and Read) mnemonic adds a disciplinary approach and is aimed at preparing students to read in

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3 situations where they have limited prior knowledge on a particular concept or topic. This strategy  
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5 includes an online search component, which provides just-in-time information to the reader,  
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7 encourages intertextual connections, and, as one student noted, “fits in with the current  
8  
9 generation” (Armstrong & Lampi, 2017, p. 7). Instruction focuses on metacognition, specifically,  
10  
11 conditional and contextual knowledge, by teaching why, when, and where the strategy might be  
12  
13 useful. It also centers on explicit instruction in metacognitive awareness and self-regulation as a  
14  
15 way to build both disciplinary understandings and proficiency with reading strategies. Instructors  
16  
17 guide students through systematic previewing of the text, purposeful terminology selection,  
18  
19 engaging intertextuality, and reading for meaning. Although this was not an empirical study, the  
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21 strategy has strong theoretical underpinnings from previous research.  
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26 This emphasis on metacognitive and self-empowering strategies is echoed in  
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28 Gruenbaum’s (2012) call to incorporate reciprocal teaching into developmental classrooms.  
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30 Reciprocal teaching is a well-documented teaching method originally developed for adolescents  
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32 to improve reading comprehension skills (Palincsar & Brown, 1984; Sporer, Brunstein, &  
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34 Kieschke, 2009) Gruenbaum (2012) suggests that its combination of prediction, questioning,  
35  
36 clarification, and summarization strategies can aid comprehension and increase writing ability as  
37  
38 students work together to bring meaning to text. Instruction in reciprocal teaching includes  
39  
40 providing scaffolding, modeling, and using specific, concrete examples of reading and writing  
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42 strategies. In a study examining the effects of instructions on university students’  
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44 comprehension, Linderholm et al. (2014) found that sometimes less is more. When students were  
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46 given instructions for reading, those that were given only a definition of self-explaining during  
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48 reading of multiple texts had greater comprehension scores than students who were provided  
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50 with a definition and modeling of the strategy. This result suggests that the explanation was  
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3 sufficient and even preferable as providing more support than students need may actually impede  
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5 learning (Holschuh, 2014).  
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8 In a study examining the effects of traditional textbook-based instruction and strategic  
9  
10 reading instruction on reading performance, Lavonier (2016) found that both approaches  
11  
12 improved student scores on the Nelson-Denny Reading Test (Brown, Fishco, & Hanna, 1993).  
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14 Textbook based instruction involved using a traditional skill-focused textbook, with the  
15  
16 instructor guiding students through the skills contained in the text. Strategic reading instruction  
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18 was conducted using Caverly et al.'s (2004) PLAN reading comprehension strategy. Although  
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20 these results are encouraging, there are limitations as there was no report on participant skill  
21  
22 levels prior to instruction. Further, using the Nelson-Denny test as the measure of success is  
23  
24 problematic for several reasons. It is not a particularly useful measure of real-world reading  
25  
26 ability, some of the stimulus passages seem unreasonably difficult, the test's time limitations are  
27  
28 unrealistic, and the norms are not nationally representative (Perkins, 1984; Smith, 1998). As with  
29  
30 many other multiple-choice reading comprehension tests, some of the items can be answered  
31  
32 from background knowledge without reading the passages (Coleman, Lindstrom, Nelson,  
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34 Lindstrom & Gregg, 2009; Ready, Chaudhry, Schatz & Strazzullo, 2012). The problem of  
35  
36 background knowledge is especially problematic for academically underprepared students and  
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38 for students from diverse backgrounds (Lei, Rhinehart, Howard & Cho, 2010), because it is hard  
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40 to interpret a test score as reflecting background knowledge (or lack thereof), or reading  
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42 comprehension ability itself.  
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50 Many studies of underprepared postsecondary students have used comprehension as the  
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52 indication of efficacy for a particular instructional strategy or approach. The results of such  
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54 studies, however, need to be tempered not only by the criticisms just mentioned, but also because  
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3 comprehension is often depicted as merely extracting information, such as writing a summary or  
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5 explaining the main idea. However, current literacy standards hold comprehension as a baseline  
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7 (National Governors' Association and Council of Chief State School Officers, 2010). Students  
8  
9 need to be able to analyze, critique, argue as well. More compelling are the studies that showed  
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11 gains on multiple outcome measures, such as strategy transfer, retention, course grades as well as  
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13 those where instruction was contextualized.  
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17 Instructional practices mirroring real-world reading experiences are associated with  
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19 learning gains. For example, Flink (2017) suggests that allowing students to self-select their  
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21 reading choices improves motivation to read and promotes the idea of reading daily. Instruction  
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23 involves allowing time in class for silent reading and a pedagogical change that views reading of  
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25 self-chosen text as valuable use of instructional time (Flink, 2017; Paulson, 2006). Flink (2017)  
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27 argues that this requires training in ways to incorporate reading time into classrooms (Flink,  
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29 2017). Paulson's (2006) review of the literature cites barriers to implementing self-selected  
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31 reading in the classroom, such as access to books and lack of a curriculum for instruction, but  
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33 states there is evidence from K-12 studies that this approach yields gains in reading ability,  
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35 which has potential for postsecondary settings. However, there is little empirical research on  
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37 particular instructional approaches or on the effects of self-selected reading at the college level.  
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42 Paulson (2014) found that using analogical processes during reading, such as presenting  
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44 the comparison of going to a movie and then describing that movie to someone unfamiliar with it  
45  
46 as an analogy for reading a text and writing a summary, can help students make connections to  
47  
48 their own knowledge and experiences while reading. Although this study focused on the efficacy  
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50 of using analogies and not on classroom instruction, the results have pedagogical implications.  
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53 Instructors can emphasize the importance of making connections between what they are reading  
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3 and what they know. Results suggest that teaching of developmental reading designed to  
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5 promote understanding embedded analogies and generating personal analogies may facilitate text  
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7 comprehension. Strategic approaches have also been used in writing instruction. Simpson (1986)  
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9 described a five-step writing strategy designed to prepare students for writing tests. Students  
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11 were taught to use course texts to complete steps described by the mnemonic PORPE: Predict  
12  
13 potential essay questions, i.e., generate questions that could be asked on essay exam; Organize  
14  
15 key ideas; Rehearse key ideas; Practice recall of key ideas in writing tasks; and Evaluate  
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17 completeness, accuracy and appropriateness of the written product using a rubric (Simpson,  
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19 1986, p. 411). Each step was taught explicitly, with teacher modeling and class discussion.  
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21 Although test preparation may seem a limited and unproductive approach to literacy instruction,  
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23 passing tests is often uppermost in the minds of postsecondary students, especially among  
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25 developmental education students, who have a history of failing tests. Test-preparation may be a  
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27 productive direction for developmental literacy instruction if the teaching is consistent with  
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29 evidence-based approaches.  
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35 A phenomenological study of the teaching of a writing strategy in developmental  
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37 education classes was reported by Perun (2015). The purpose of the instruction was to improve  
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39 students' ability to revise previously written papers. The students were given an assignment sheet  
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41 with detailed instructions on how to revise a paper and a rubric. The students worked in small  
42  
43 groups to annotate the assignment sheet to show understanding of the teacher's expectations. In  
44  
45 class discussion, teachers asked the students how they would approach the task and provided  
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47 evaluative feedback. Teachers modeled steps for revision on the board and had students freewrite  
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49 (write continuously without concern for grammar, spelling or other writing conventions).  
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51 Teachers also gave students written feedback on drafts. This descriptive study portrayed a  
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comprehensive strategy made up of component procedures centering on the complex skill of revision of writing.

A quasi-experimental study comparing self-regulated writing strategy instruction with business-as-usual developmental writing instruction was conducted by MacArthur et al. (2015). Over one college semester, teachers used a researcher-developed curriculum to teach steps for planning, drafting, evaluating and revising essays in combination with self-regulation strategies of goal-setting, task management, progress monitoring and reflection. The major academic writing genres of persuasive, descriptive, cause-effect and narrative writing were included. Basic grammar and the use of English language conventions were taught along with editing and revision. This is a rare study in the literature for its rigor and the size of research sample (N=252, with 115 treatment, 137 comparison students). Pre-post measures included persuasive essays scored for quality, length and grammar; and a motivation questionnaire examining mastery goals, self-efficacy, beliefs and affect. Two Woodcock Johnson-III (Woodcock, McGrew, & Mather, 2001) writing subtests were entered as covariates. The intervention showed positive effects on writing quality and length (effect sizes 1.22 and 0.71), mastery goals (effect size 0.29), and self-efficacy for tasks and processes (effect size 0.27) but not for grammar, beliefs or affect. A detailed description of the self-regulated writing strategy instruction tested by MacArthur et al. (2015) is found in Blake et al. (2016).

The pedagogy employed in the MacArthur et al. (2015) intervention borrows directly from a robust body of evidence on the effectiveness of writing strategy instruction in K-12 education (Graham, Harris & Chambers, 2016). The field of developmental education would benefit considerably from testing literacy strategies documented as effective in K-12 and modifying them to build in principles of adult learning, such as tailoring instruction to students'

## Underprepared Postsecondary Students

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3 immediate learning needs, capitalizing on students' motivation to learn, assumptions of adults'  
4 self-confidence based on their family and community roles, and need for self-determination  
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8 (Barhoum, 2017; Knowles, 1984).  
9

**New and Multiple Literacies**

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11  
12 In contrast to the discrete skill and strategy perspectives on literacy in postsecondary  
13 education is the new, or multiple, literacies framework, which views acts of reading and writing  
14 as socially-constructed, communicative acts rather than a demonstration of skill (Relles &  
15 Duncheon, 2018). Studies of literacy conducted in this framework tend to examine how students  
16 express themselves and communicate with each other.  
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24 Hsu and Wang (2010) investigated the use of blogs on student motivation and reading  
25 comprehension in a developmental reading course. The instructors used the blogs as a way for  
26 students to respond to comprehension questions, write reflective essays, and other authentic  
27 learning tasks. Blogging activities were aligned with course curriculum and emphasized critical  
28 thinking skills. Results were reported in comparison to nine sections of the same course that did  
29 not use blogs. While no differences were found for reading performance or motivation, students  
30 in the blogging group had higher retention rates. Instructor interviews indicated that they were  
31 not entirely comfortable integrating technology in their classrooms, which suggests a need for  
32 professional development.  
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44 In a description of how the multiple literacies approach can be used in writing instruction,  
45 Fernsten and Reda (2011) recommend a model of teaching using “reflective writing exercises [to  
46 help] students better understand the work of writing as they struggle to become more effective  
47 writers, negotiating multiple literacies” (p. 173). In one activity, students work together to  
48 compose a “group profile” (p. 176), the purpose of which is to help them see that they are not the  
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3 only ones with writing problems and to view themselves as writers and critical thinkers. In  
4  
5 another activity, students create “author’s notes” (p. 177) to facilitate their reflection on their  
6  
7 writing goals and processes to create it. To guide the activity, the teacher provides 35 guiding  
8  
9 questions, such as “What is the best thing (sentence, idea, section, etc.) in this draft? Why?” and  
10  
11 “Where do you think readers might get stuck or need more information?” (pp. 177-178). This  
12  
13 descriptive work provides interesting ideas on pedagogy that could be tested in future studies of  
14  
15 effective writing interventions for academically-underprepared postsecondary students.  
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17

18  
19 Relles and Duncheon (2018) criticized teaching practices observed in developmental  
20  
21 writing classrooms through the lens of new literacies. They observed the assignment of discrete,  
22  
23 decontextualized activities such as having students play a game involving the omission of  
24  
25 unnecessary words from run-on sentences, designed to expose them to functional grammar. They  
26  
27 suggest that students would increase their social identity as writers if instructional periods were  
28  
29 lengthened, class sizes were reduced to allow more instructor feedback, and instructors created  
30  
31 an environment for writing activity that promoted authentic discussion and interaction.  
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### 34 35 **Disciplinary and Contextualized Approaches**

36  
37 On the hypothesis that connecting the teaching of literacy skills to material that is  
38  
39 meaningful and useful to students will deepen learning, develop critical thinking skills, promote  
40  
41 transfer of skill, and increase motivation to learn, (Goldman et al., 2016; Perin, 2011; Shanahan  
42  
43 & Shanahan, 2012), some postsecondary developmental instructors contextualize their  
44  
45 instruction in academic disciplinary content, such as history and science. (We use the terms  
46  
47 “contextualized” and “disciplinary” interchangeably here.) This approach gives students an  
48  
49 opportunity to practice reading the type of materials and engage in the literacy tasks that will be  
50  
51 expected of them in the rest of their college courses (Armstrong & Newman, 2011). Disciplinary  
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## Underprepared Postsecondary Students

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3 reading strategies may be taught to college students ranging widely in literacy proficiency  
4  
5 (Hynd, Holschuh, & Hubbard, 2004), but here we discuss this approach as used with  
6  
7 underprepared students.  
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9

10 Armstrong and Newman (2011) suggest a model of intertextuality that includes explicit  
11 instruction to promote active reading, main idea identification, vocabulary development, and  
12 learning and study skills for application to a range of history texts, including primary and  
13 secondary sources, in a developmental reading course. They provide a description of practical  
14 application of intertextuality both in community college and university settings where students  
15 met in groups to discuss perspectives on topics drawn from the history texts they were using used  
16 charts and graphs to represent the various authors' views and wrote paragraphs and essays. The  
17 authors suggest that this model can help students in developmental education begin to view  
18 themselves as active participants in the reading process.  
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31 Leist, Woolwine, and Bays (2012) developed an assessment instrument that contained  
32 detailed instructions for applying reading and writing skills to content-area reading material.  
33 Instructions directed students to mark and annotate the content text and then write a summary  
34 that included the main idea, supporting facts and data, the application to the subject area (history,  
35 biology or psychology), and how the material was relevant to the student. The assessment was  
36 introduced, explained and modeled and then used during a developmental reading course. Using  
37 a pre-experimental design with no control group, the researchers found a statistically significant  
38 increase on posttest scores on the COMPASS reading test (ACT, 2009), with greater gains  
39 achieved when more reading was assigned. This result is encouraging, but the COMPASS test is  
40 subject to the same criticisms leveled against the Nelson-Denny Test above.  
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Contextualized literacy instruction appears to benefit students in multiple contexts. In a rare study on Native American students, Toth (2013) described an approach to teaching developmental writing in a tribal community college. The course, according to the college catalogue, aimed to advance “students’ abilities to write well-crafted and grammatical essays, with appropriate and effective word choice” of the Diné (Navajo) students (Toth, 2013, p. 12). In contextualization of writing instruction, the teacher explained cultural and historical aspects of language, comparison of lexical features of English and the home language. There was class discussion of history and language throughout the course. The author stated that the students’ use of conventions improved by the end of the course. The Toth (2013) study suggests that contextualized approaches would be useful for this population.

Perin et al. (2013) examined the effects of providing contextualized practice in developmental reading and writing courses in several urban and suburban community colleges. Participants engaged in self-paced steps to practice reading comprehension, vocabulary development, written summarization and other literacy skills before, during, and after reading science text from anatomy and physiology textbooks or generic reading passages from developmental textbooks. Statistically significant gains were found for a key outcome variable of written science summarization measure for both contextualized conditions compared to a business-as-usual comparison condition, with greater gains for participants whose practice was contextualized in science text.

Working within a new literacies framework, Tremmel (2011) proposes a move from a traditional approach where students are taught to write 5-paragraph essays on isolated topics, to project-based literacy instruction contextualized in meaningful topics, texts and experiences both in and out of academic settings. The author gives as an example a project used in a college

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writing course that involves research, interviews and writing in several genres on the topic of senior citizens. Products of this experience include collaborative multi-media presentations.

Tremmel makes recommendations for reforming writing instruction that could be tested in future intervention research, such as having instructors develop their own curricula, reject deficit approaches to student writing, allow students to experience more control over their own learning process, stimulate student interest in writing rather than concentrating only on the development of skill, connect academic writing to non-academic experiences, and reduce the focus on assessment.

**Use of Digital Technology**

There has been considerable interest in online teaching options in postsecondary education (Kebritchi, Lipschuetz, & Santiago, 2017). For example, with the aim of increasing motivation to read, critical thinking skills and active learning among developmental reading students, Burgess (2009) implemented a hybrid course where the digital technology component consisted of a discussion board and online chat. Course design was based on principles of communication, feedback, and approach to learning (Testa, 2000). The discussion board was asynchronous; students submitted posts at times of their own choosing and engaged in collaborative work. Online chat was synchronous; here, the teacher and students engaged in discussion. Students also communicated with the teacher via email. The content of the reading course was not reported but the researcher reported anecdotal evidence based on examination of the discussion posts, chat interactions, journal reflections and student interviews that student motivation, critical thinking and active learning improved over period of the course.

Yang (2010) developed a web-based reciprocal teaching interface for academically underprepared English language students enrolled in a developmental reading course in Taiwan.

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To teach the skills involved in reciprocal teaching, Yang (2010) used an online dialogue box, chat room, discussion forum, and annotation tool. Instructors initially led the students by facilitating discussion, but their input was gradually withdrawn as students became better able to use both the technology and the critical thinking and reading processes of reciprocal teaching. A pre-experimental design showed gain on a reading test at the end of the course.

Social media platforms may be a useful venue for developing literacy skill. Ingalls (2017) examined the feasibility of using Facebook as a learning management system in a developmental writing course. The college had replaced leveled courses with a single course and a tutor was present in the classroom. Using Facebook, the teacher aimed to create a community of learners, build students' confidence in writing, promote sharing of writing. The teacher created a private Facebook page and established rules of interaction. Work on Facebook replaced face-to-face attendance at times. Students were required to post privately to the teacher and post questions to clarify ideas and understanding of assigned homework. Correct grammar encouraged but not required. Students were required to use the platform to communication with peers and teachers throughout the course. Ingalls (2017) concluded that this approach was feasible, and review of students' work showed improved writing, grammar and spelling. Other instructors had reservations about using Facebook, expressing concerns about security and privacy, the purpose of social networking, and its educational value; these concerns have also been expressed in other venues (Kebritchi et al., 2017).

The use of digital material was investigated by Relles and Tierney (2013) as developmental writing students in a summer bridge program developed personal profiles. The course utilized an online social network platform that was similar to Facebook except that it permitted the creation of a closed community. The class lasted 80 hours over four weeks and

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took the form of an online community. In this descriptive, new literacies study, the authors analyzed students' digital work, including text, image, and audio and video posts. There was no description of the teaching of writing in this study, but the authors discussed the importance of digital literacy proficiency for college literacy demands.

Saidy (2018) conducted a case study of the use of podcasting in a developmental education summer bridge course whose purpose was to introduce underprepared students to the content and methods of study in the humanities through writing activity. Podcasting was used to provide opportunities for multimodal composing. A one-week (18-hour) curriculum was organized around the topic of food. The podcasting was designed to encourage struggling writers to “jump into composing and take creative risks as they navigated the transition to college writing” (Saidy, 2018, p. 262). The teacher first surveyed the students on their high school writing experiences and beliefs about writing. Then, students listened to an existing podcast and worked individually and in pairs on a script for own podcast. To develop podcast scripts, the students created an argument, identified genre elements such as opening, statistics, quotations, determination of credibility, statement of argument, analysis with evidence, and sound effects for the podcast. Based on peer review, the students revised their productions. Based on qualitative examination of the students' work, the author concluded that podcasting encouraged critical thinking and self-reflection and promoted audience awareness and understanding of nature of college writing.

### **Integrated Reading and Writing Instruction**

The immediate, pressing problem for the teaching of literacy to academically underprepared postsecondary students is poor outcomes in terms of course completion, retention in college programs, and college graduation (Bailey et al., 2010). Reforms of developmental

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3 education have been reported, although rarely evaluated through rigorous comparative research.  
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5 Based on the available literature, reform efforts appear to center on structural rather than  
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7 pedagogical efforts. A reform structure that has attracted a certain amount of attention is  
8  
9 “acceleration,” whereby students’ move through developmental education is hastened through  
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11 reduction of course length or number of courses that must be taken in a developmental education  
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13 program (Brathwaite & Edgecombe, 2018; Cho, Kopko, Jenkins, & Jaggars, 2012; Edgecombe,  
14  
15 Cormier, Bickerstaff, & Barragan, 2013; Edgecombe, Jaggars, Xu, & Barragan, 2014; Jaggars,  
16  
17 Hodara, Cho, & Xu, 2015; Jenkins, Speroni, Belfield, Jaggars, & Edgecombe, 2010). Ideally,  
18  
19 acceleration reduces potential exit points for students and offers a quicker path to credit-bearing  
20  
21 coursework (Bickerstaff & Raufman, 2017; Gerber, Miller, Ngo, Shaw & Daugherty, 2017;  
22  
23 Hodara and Jaggars, 2014; Jaggars, et al., 2015). One method of acceleration that has direct  
24  
25 pedagogical implications is the integration of reading and writing courses, replacing stand-alone  
26  
27 courses in each of these areas (Hayward & Willett, 2014; Henson, 2017; Hern, 2013;  
28  
29 Kalamkarian, Raufman, & Edgecombe, 2015).

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35 Pacello (2014) reported on a study in which reading and writing instruction was  
36  
37 integrated by assigning writing tasks as responses to course readings. Various types of writing  
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39 were assigned, including informal blogs, and formal paragraphs and essays. Students kept  
40  
41 “metacognitive reading blogs” (Pacello, 2014, p. 127) for three weeks towards the end of the  
42  
43 course in which they practiced writing skills by reflecting on and summarizing their reading  
44  
45 process. Prewriting, drafting, proofreading/ revision, grammar, punctuation skills were taught  
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47 explicitly in the course, which appears to be conventional practice (Grubb & Gabriner, 2014),  
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49 but the metacognitive focus on students’ literacy process may help academically underprepared  
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3 students make a transition from writing as an academic exercise to more authentic writing  
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5 practices (Kucer, 2014).  
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7  
8 In an approach to integrating reading and writing instruction studied by Falk-Ross  
9  
10 (2001), the teacher assigned an inquiry writing task for the purpose of improving reading  
11  
12 comprehension. The topics were self-selected and mostly related to students' college major. As  
13  
14 part of instruction, the teacher explained the writing process. To gather information, students  
15  
16 held interviews, conducted internet searches, and read journals and other texts. Reading  
17  
18 strategies were taught and 1 to 2 hours per week were spent on writing the inquiry paper. In  
19  
20 small group discussion, students compared their papers. The teacher held writing conferences  
21  
22 and the students kept journals on their reading and writing process. The researcher's field notes,  
23  
24 participant observation, and student reading scores suggested that the integrated inquiry activity  
25  
26 was beneficial to students. Students demonstrated increasing awareness of connections between  
27  
28 reading and writing and showed gain of approximately 3 grade levels on the Test of Adult Basic  
29  
30 Education (TABE).  
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35 In another approach to reading-writing integration, Mongillo and Wilder (2012) assigned  
36  
37 writing tasks in a developmental reading course. The integrated activity was conducted online  
38  
39 through a discussion board. Students posted anonymously a written description of an object in a  
40  
41 picture provided by the teacher. Peers in the class were asked to select one of six provided  
42  
43 pictures to guess picture being was described, and to state in writing why they selected that  
44  
45 picture. The writing assignment was to write a paragraph describing a situation currently being  
46  
47 reported in the news without explicitly stating the topic. Peers in the class were asked to guess  
48  
49 the topic based on the description and provide written explanation. Correct peer guesses in both  
50  
51 assignments were taken to indicate good descriptive writing skills on the part of the writer. A  
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3 ceiling effect of 66-100% correct guesses was found, but it is possible that the integrated activity  
4  
5 could be useful if they were more demanding.  
6

7  
8 Becket (2005) discussed a model where reading and writing were taught separately in  
9  
10 two sequential hours. The first hour was taught by a reading teacher and the second by a writing  
11  
12 teacher, but the teachers collaborated on planning instruction to create “interactive discussion  
13  
14 classes” (Becket, 2005, p. 60) that drew in both literacy areas. The focus of the writing class was  
15  
16 essay writing. The teacher encouraged the students to incorporate personal experience but topics  
17  
18 came from text assigned in the reading class, such as on peer pressure in education, change that  
19  
20 represented “rite of passage” (Becket, 2005, p. 64), experience of immigration. In one writing  
21  
22 activity exemplifying the approach used in this class, students practiced argumentative writing  
23  
24 by applying personal experience to evaluate a television show from different perspectives. This  
25  
26 model seems promising provided that instructors collaborate effectively to develop an integrated  
27  
28 curriculum.  
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32  
33 In the context of institutional pressure to accelerate students’ completion of  
34  
35 developmental education, there is often little guidance for integrating the current reading and  
36  
37 writing curriculum, which leads some faculty to use an additive approach focusing on teaching  
38  
39 discrete skills by adding new activities or assignments to previously used course materials  
40  
41 without a framework for integrating the curriculum (Bickerstaff & Raufman, 2017). In a case  
42  
43 study on the use of adaptive technology including text-to-speech and graphic organizer software,  
44  
45 in integrated courses for students with learning disabilities, instructors combined the content  
46  
47 from separate reading and writing courses and taught reading strategies such as selecting main  
48  
49 idea, decoding, and understanding text coherence in conjunction with writing strategies such as  
50  
51 summary writing, paragraph structure, and understanding rhetorical structure (Engstrom, 2005).  
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The use adaptive technologies in the context of integrated reading and writing instruction aided a range of basic word-reading skills as measured by several standardized measures.

Bickerstaff and Raufman (2017) investigated of perceptions of integrating reading and writing courses using interviews, focus groups, and case studies. One writing instructor using an additive approach reported, “I thought, well, I’ll just keep the comp quizzes. They used to be grammar and punctuation, and I can throw the reading in” (p. 9). This approach resulted in frustration because faculty were not able to cover all of the material they had taught when the courses were separated. Alternately, instruction that adopted a truly integrative approach to the courses were frequently structured around a theme around which all texts and tasks were centered. The themes were purposefully broad, such as ‘struggle’ or ‘success.’ Often a single anchor text was used as the basis for reading and writing tasks and assignments that all connected back to the theme. Many of these tasks included text-based writing assignments with strategy instruction embedded within scaffolding students to complete the writing tasks (Bickerstaff & Raufman, 2017) and decisions on integrating assignments were purposefully made (Goen & Gillotte-Tropp, 2003). Instructors using the integrative approach reported more comfort and satisfaction in teaching and increased student understandings of the relationships between reading and writing (Bickerstaff & Raufman, 2017).

Implementing an acceleration model, a developmental program combined five separate courses into one year of integrated reading and writing that included both developmental coursework and the first credit-bearing composition course (Goen & Gillotte-Tropp, 2003). Instruction centered on making the connections between reading and writing explicit using a range of texts. Because instructors had a full year with the students they could introduce integrated strategies using increasingly complex material. Compared to a traditional-instruction

control group, students receiving integrated instruction showed higher course pass rates, reading and writing scores and college retention rates.

Overall, research examining the efficacy of acceleration in integrated reading and writing courses, has had mixed results. Although not describing classroom teaching, Paulson, Van Overschelde, and Wiggins (2018) examined the efficacy of accelerated integrated reading and writing courses in community college compared to non-accelerated developmental reading and developmental writing courses. Using 10 years of data from 1.5 million community college students in Texas, they found that students who took two separate courses (developmental reading and developmental writing) were more likely to pass their first college-level intensive reading or intensive writing course than those who took the accelerated integrated reading and writing course. They caution that the results should not be used to imply that reading and writing processes should not be taught together, but rather that the acceleration of these courses was not effective in the ways in which they were taught. An investigation of the actual teaching strategies used to integrate these two areas of literacy would help in the interpretation of findings.

### **Future Directions for Changing Instruction**

The purpose of the current volume is to explore issues in changing teaching practice. Two key assumptions seem to underlie this goal, first, that teaching needs to change and second, that teaching can change. In surveying the available literature on teaching of literacy to academically underprepared students in postsecondary education, we can hypothesize that teaching does need to change, because student outcomes for this population are historically poor. There is evidence that high-quality teaching is associated with strong student achievement (Darling-Hammond, 2000; Tyler, Taylor, Kane & Wooten, 2010), although, admittedly, such evidence comes from the K-12 arena rather than postsecondary education. There has been much

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3 interest in reforming developmental education in recent years (Brathwaite & Edgecombe 2018),  
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5 but only one of eight current reforms described in a U.S. Department of Education report (Schak,  
6  
7 Metzger, Bass, McCann & Englis, 2017) clearly involves teaching, and further, the report named  
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9 one specific approach, contextualized instruction, rather than addressing the improvement of  
10  
11 teaching as a whole.  
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**Investigations of Current Teaching Practices**

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17 An important prerequisite of improving teaching is shared theoretical frameworks and  
18  
19 operating principles but these appear to be lacking in postsecondary developmental education.  
20  
21 Eight years before this chapter was written, Paulson and Armstrong (2010) claimed that the field  
22  
23 lacked coherent theory, agreed-upon terminology, and teacher-preparation approaches.  
24  
25 Unfortunately, this criticism is still warranted as there is no consistent research agenda or body  
26  
27 of research that could guide pedagogical reform. Instead, studies of the teaching of  
28  
29 developmental reading and writing are generally single, isolated efforts that do not build on prior  
30  
31 instructional research. Although developmental instructors report a need to improve pedagogy to  
32  
33 meet students' needs more effectively (Barragan & Cormier, 2013), the research literature at  
34  
35 present does not offer clear directions for change.  
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40 The first step in understanding how teaching might change would be to know what  
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42 teaching is actually like at the current time. The available literature presents a large number of  
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44 approaches and strategies, mostly with minimal evidence, making it difficult to propose general  
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46 recommendations on how the teaching of developmental literacy might change for the better.  
47  
48 Approaches reported in the literature fall into two categories, teacher actions and student actions.  
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50 Among teacher actions reported, we see vocabulary and grammar drills, explicit teaching of  
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52 strategies for reading, writing or self-regulation, and integration of reading and writing  
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3 instruction. Student actions include writing blogs, and posting writing to social media platforms.  
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5 At the present time, there is no sign that the field is coalescing around any one approach, or that  
6  
7 a critical mass of evidence is developing. However, there is general interest in connecting the  
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9 literacy skills being taught to authentic college level practices such as comprehension of  
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11 academic text and the writing of argumentative essays, which is consistent with a larger trend in  
12  
13 literacy research (Purcell-Gates & Duke, 2016).  
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16  
17 The majority of studies suggest that reading and writing instruction that is potentially  
18  
19 effective involves much more than teaching discrete skills. Instead, teaching practices focusing  
20  
21 more on cognitive, metacognitive, and motivational strategies provide encouraging results  
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23 (Alexander, 2012; Pressley & Afflerbach, 1995). Additionally, the literature suggests that student  
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25 gains may be achieved within a short instructional timeframe, which is encouraging, although  
26  
27 whether the gains hold would have to be investigated. There is also good evidence of a  
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29 systematic approach to reading or writing instruction that includes a gradual release of  
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31 responsibility from instructor to student, especially in the studies of strategy instruction (e.g.,  
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33 Armstrong & Lampi, 2017, and MacArthur et al., 2015). Overall, current research suggests that a  
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35 contextualized and strategy-based approaches have more pedagogical promise than  
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37 decontextualized or discrete skill approaches, but there may be other promising pedagogical  
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39 practices that are not currently reported in the literature. However, appropriate literacy  
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41 assessments for postsecondary students need to be developed that move beyond the skills-based  
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43 assessments such as the Nelson-Denny. There is longstanding criticism of these traditional  
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45 reading tests, going back to the 1940s (Cronbach, 1946). The field seems ready for an overhaul  
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47 of reading assessment for underprepared students, at least to bring measures closer to authentic  
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49 reading practices.  
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Rigorous research designs, widely considered a necessary prerequisite of improving teaching practice (Farley-Ripple, May, Karpyn, Tilley & McDonough, 2018), are sorely lacking in studies of teaching literacy to underprepared postsecondary students. The most rigorous test of any teaching practice in the literature is the quasi-experimental study of writing instruction conducted by MacArthur et al. (2015), which provides evidence for the use of explicit teaching of both literacy and self-regulation procedures to help underprepared students improve their writing of academic essays.

Observations of purposive samples of developmental education classrooms have led to conclusions that the field is marked by a preponderance of discrete skill instruction (Grubb et al., 1999; Grubb & Gabriner, 2013) and wide discrepancies between students' and teachers' definitions of good teaching (Cox, 2009). However, it is difficult to know what is being taught in developmental education classrooms when rigorous observation studies with representative samples of classrooms, teachers and students are not reported in the literature. Thus, there is a need for more research on instructional approaches in developmental literacy courses. These could be either small-scale curriculum audits, similar to Armstrong, et al. (2015), or larger scale surveys as called for by MDRC (2013). A useful preliminary step would be to conduct a national survey of developmental education teachers on their classroom practices, as has been done in K-12 education (e.g., Gilbert & Graham, 2010). Such investigations would aid greatly in understanding what is working and what modifications are needed in current practice.

There have been calls to change instructional approaches in developmental education for decades. Rose (1983) argued that "a major skill in academic writing is the complex ability to write from other texts—to summarize, to disambiguate key notions and useful facts and incorporate them in one's own writing, to react critically to prose" (p. 9). This cannot be

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3 achieved using a part-to-whole approach (Grubb, 2012). Every one of Stahl, Simpson, and  
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5 Hayes' (1992) recommendations for improving instruction in developmental education continue  
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7 to be needed changes. Their calls for emphasizing transfer to new contexts, helping student  
8  
9 broaden conceptual knowledge, explicit teaching of strategies, and promoting self-regulation and  
10  
11 metacognition align closely with the implications of the research discussed in this paper.  
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14  
15 An implicit goal of the literature on teaching literacy to academic underprepared  
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17 postsecondary students seems to be to present teaching approaches that would help students learn  
18  
19 more effectively than (usually unnamed) conventional approaches. However, the authors rarely,  
20  
21 if ever, place their teaching approaches in the larger context of reform of K-20 teaching in  
22  
23 general. Instructional reform across educational domains has attracted and continues to attract  
24  
25 much attention in the education literature (Hiebert & Stigler, 2017; Sykes & Wilson, 2016;  
26  
27 Tschannen-Moran, Hoy & Hoy, 1998); developmental education researchers would benefit from  
28  
29 broadening their perspective to include theory and practice discussed in this larger body of  
30  
31 literature.  
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### 34 35 **Examining Preparation of Literacy Instructors in Developmental Education**

36

37  
38 There is a need to examine the instructional approaches of successful developmental  
39  
40 education classrooms and to provide meaningful professional development opportunities for  
41  
42 instructors as well (Bickerstaff & Raufman, 2017; Paulson, et al., 2018). One area in particular  
43  
44 seems to need urgent attention, preparation of instructors to teach both reading and writing in  
45  
46 integrated courses as institutions increasingly adopt the integrated approach mentioned above.  
47  
48 Traditionally, instructors have been trained either to teach reading or writing. Moreover,  
49  
50 developmental reading and writing courses have typically been housed in different departments  
51  
52 and guided by different theoretical understandings (Paulson & Armstrong, 2010). To prepare  
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## Underprepared Postsecondary Students

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3 instructors to teach integrated reading and writing courses, some colleges have relied on cross  
4  
5 training between reading faculty and English faculty (Bickerstaff & Raufman, 2017). However,  
6  
7 teaching integrated reading and writing may differ from teaching either reading or writing alone  
8  
9 (Shanahan & Shanahan, 2012). For example, it would be important to teach text-based writing,  
10  
11 using multiple sources as required in college education. Teaching text-based writing requires an  
12  
13 equal focus on reading comprehension and writing skills, but it appears that few developmental  
14  
15 instructors are prepared for this task.  
16  
17

18  
19         There is little information on the preparation of developmental education instructors for  
20  
21 integrated instruction or any other area of teaching academically underprepared postsecondary  
22  
23 students. The few studies that have been conducted are in single institutions and center on  
24  
25 perceptions of faculty and administrators in regard to professional development (for example,  
26  
27 Elliott & Oliver, 2016), rather than being rigorous tests of professional development approaches.  
28  
29 In fact, the field of developmental education as an area of scholarly pursuit is relatively new,  
30  
31 even though there have been studies on the constituent population for decades. One difficulty in  
32  
33 this field is a disconnect between those who teach these postsecondary students, and those doing  
34  
35 research. For example, there is currently only one Ph.D. program in developmental education in  
36  
37 the United States (see <http://www.education.txstate.edu/ci/dev-ed-doc/about/overview.html>).  
38  
39 Given the pressing need for better teaching of underprepared students, an important contribution  
40  
41 of emerging scholars would be to identify effective approaches to professional development.  
42  
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45  
46         Such models may be adapted from the ample K-12 professional development literature.  
47  
48 For example, investigations could focus on approaches in which teachers are included in a  
49  
50 collaborative planning process (for example, see Miller, 2017), and the replacement of  
51  
52 traditional short-term presentations by outside experts by the provision of ongoing classroom  
53  
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1  
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3 observation and coaching by individuals who have credibility among the instructors who are  
4 recipients of the professional development (for example, see Matuchniak, Olson & Scarcella,  
5  
6  
7  
8 2014).

### 9 10 **Examining Pedagogical Practices based on Assumptions about the Developmental** 11 12 **Education Population**

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15 Historically, much of the research on learners in developmental literacy has taken a  
16 deficit approach. It has been argued that this deficit thinking is “tantamount to ‘blaming the  
17 victim’. It is a model founded on imputation, not documentation” (Valencia, 2012, p. X) and  
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3 paucity of research examining the effectiveness critical socio-cultural instructional approaches in  
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5 developmental courses.  
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8 Attempts to reform teaching may be affected by changes in state regulation and  
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10 legislation (Paulson & Holschuh, 2018). Often, the suggested changes center on institutional  
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12 changes, such as online delivery, non-mandated enrollment (Woods, Park, Hu, & Jones, 2017),  
13  
14 or accelerated options, based on assumptions that developmental courses may not be beneficial.  
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16 Research is needed to explore the effects of such institutional choices on how literacy is taught to  
17  
18 underprepared students and how that, in turn, affects student outcomes.  
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### 21 **Conclusions**

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24 Our discussion on how teaching might change to serve the literacy needs of academically  
25  
26 underprepared students in postsecondary education points to a key problem that a wide range of  
27  
28 instructional approaches is in use, with no central organizing theory or theme, and a general lack  
29  
30 of supportive evidence. However, change in teaching approaches seems to be needed, based on  
31  
32 poor achievement outcomes that have been reported. It is encouraging that, underlying the  
33  
34 purposes of virtually all of the current literature is an interest in changing the way underprepared  
35  
36 students are taught, with many of the studies aiming to illustrate specific changes. These studies  
37  
38 can be viewed as a rich source of hypotheses on change in teaching practice. The next step to  
39  
40 advance the field would be to test these practices in rigorous, controlled research that carefully  
41  
42 documents and compares the new and conventional teaching approaches. Additionally, changing  
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44 teaching requires the development and testing of professional development approaches,  
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46 possibly adapted from the K-12 arena, with modifications for postsecondary education.  
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Underprepared Postsecondary Students

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### Abstract

Only 25-~~32~~8 percent of secondary education graduates in the U.S. are proficient readers or writers but many continue to postsecondary education, where they take developmental education courses designed to help them improve their basic academic skills. However, outcomes are poor for this population and one problem may be that approaches to teaching need to change. This chapter reviews-discusses approaches to the teaching of academically underprepared postsecondary students with the aim of identifying and how teaching might be changed in order to improve student outcomes. A review of literature yielded 36 studies, which were discussed within six themes: A wide variety of approaches is reported in the literature, including teaching of discrete skills, providing strategy instruction, incorporating new and multiple literacies, employing disciplinary and contextualized approaches, using digital technology, and integrating reading and writing instruction. However, the field has yet to develop a clear theoretical framework or body of literature pointing to how teaching in this area might improve. Based on our reading of the literature, we recommend directions for future research that could inform changes in the teaching of underprepared students at the postsecondary level. Based on the literature reviewed, recommendations for research and practice bearing on the instructional change are offered.

### Introduction

This chapter aims to identify ways in which the teaching of academically underprepared postsecondary students in postsecondary education might be changed in order to enhance students' learning opportunities. The population of interest is students who enter in postsecondary institutions-education with reading and writing skills that are below the level required for meaningful learning. at the postsecondary level, despite completion of secondary education. As

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~~might be expected, e~~ Educational outcomes for this population are poor in terms of ~~slow~~ ~~development of skills~~ skill development, academic ~~failure~~ achievement, and ~~attrition~~ persistence (Bailey, Jeong, & Cho, 2010; Perin, Bork, Peverly, & Mason, 2013; Perin, Lauterbach, Raufman, & Santikian Kalamkarian, 2017).

~~It is a truism that s~~ Strong literacy skills serve as a foundation of learning ~~throughout~~ ~~education,~~ from ~~the~~ early elementary grades through postsecondary education. However, in the United States, only 38 percent of students in the last year of secondary education are proficient readers, 25 percent are proficient writers, and 28 percent display ~~very~~ low reading skills (National Assessment of Educational Progress (NAEP), 2015a). ~~Further, only about one quarter of twelfth graders have proficient writing skills (-~~ National Center for Education Statistics, 2012).

In the United States, underprepared ~~high school graduates~~ postsecondary students ~~can~~ ~~gain admission to college, where they are often~~ may be referred for supportive courses and services designed to help them improve their literacy and mathematics skills and, ~~more~~ ~~generally,~~ become familiar with ~~postsecondary~~ academic expectations. ~~Together, t~~ These supports are referred to as “developmental education,” which has been defined as “a comprehensive process that focuses on the intellectual, social, and emotional growth and development of all students. Developmental education includes, but is not limited to, tutoring, personal/career counseling, academic advisement, and coursework” (National Association for Developmental Education, n.d.). Developmental courses are often offered at several levels, with students placed based on assessments administered upon college entry. ~~Students receiving developmental education services are generally proficient in oral English, although some are native speakers of non-English languages or non-standard English, which is beyond the scope of this review.~~ In this

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chapter, we focus on postsecondary developmental education in postsecondary institutions ~~and, specifically,~~ coursework and interventions designed to improve reading and writing skills.

~~Besides developmental education, the courses are known by names such as remedial, academic literacy, basic skills, or pre-college, courses.~~

Course taking rates vary by type of institution, with an estimateds of 5.6-28.1 ~~33-68~~ percent of students in public 2- and 4-year institutions taking at least one developmental reading or writing education course (Chen, 2016; Skomsvold, 2014, Table 6.2). Enrollments in these literacy courses are higher in community (2-year) colleges. For example, 28.1 percent of 2-year compared with 10.8 percent of 4-year college students enroll in developmental reading or writing courses (Chen, 2016, Table 1). In fact, college policies vary considerably regarding whether students found to be academically underprepared upon college entry are actually required to enroll in developmental education courses. For this reason, Enrollments may be an underestimate of underpreparedness, as many students referred to developmental education elect not to attend but, rather, enroll in college-level courses instead (Perin & Charron, 2006).

~~Despite the ubiquity of postsecondary developmental education, especially within community colleges,~~ oOutcomes for entering postsecondary students identified as academically underprepared have been poor, as measured in rates of course completion, persistence in college, grade point average and degree attainment (Bailey et al., 2010), especially for students of color. For example, a majority of Latinx students s do not progress beyond developmental coursework (Acevedo-Gil, Santos, & Solórzano, 2014) and, further, the lower Latinx students are placed in the developmental English course sequence, the lower the likelihood of success in credit-bearing English classes (Acevedo-Gil, Santos, Alonso, & Solorzano, 2015). Although there are ~~no doubt~~

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multiple causes of the poor outcomes (Cohen, Brawer & Kisker, 2013), there have been calls for improvement of developmental instruction, ~~for example as expressed in the following quotation:~~

Little is known about what really goes on in developmental education classrooms, and even less is known about the attributes of effective teaching for this population.

Principles of adult learning are often poorly understood by developmental education instructors, who are typically not offered professional development opportunities by their employers. Evidence-based instructional strategies used in high schools could be readily adapted for community colleges. Professional development for instructors and curricular reforms may be needed (MDRC, 2013, p. 2).

Observations of developmental education classrooms have been reported ~~but these have been confined to single states,~~ for example by Norton Grubb and colleagues (Grubb, 2012; Grubb & Grabriner, 2013; Grubb et al., 1999, in California), ~~but these have been confined to single states, and more wide-ranging, systematic observational studies are needed.~~ Lack of preparedness for postsecondary academic demands is problematic for ~~the many students with career aspirations, fulfillment of which depends on a college education.~~ However, efforts to prepare secondary education graduates for the literacy demands of postsecondary education indicate the difficulty of achieving this goal. For example, in a rare ~~one~~ study reporting evidence bearing on this problem (Kallison, 2017), even after improving skills in an intensive high-school-to-college transition program that taught to state reading and writing standards, a group of underprepared secondary education graduates remained unready for college literacy demands.

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### Purpose and Questions

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There are many factors that underlie academic difficulty. The current ~~review chapter~~ sets out to understand one of these factors, approaches to teaching. ~~Our~~ ~~The~~ purpose ~~of the review~~ is to identify ways in which the teaching of academically underprepared students in postsecondary education might be changed in order to enhance students' learning opportunities. Based on ~~a~~ ~~available~~ ~~review~~ ~~of~~ ~~literature~~, ~~the~~ ~~chapter~~ ~~identifies~~ ~~we~~ ~~identify~~ strengths and shortcomings of current approaches to teaching in postsecondary developmental settings in order to present directions for research and practice in instructional improvement. Three questions guided the review ~~our~~ ~~discussion~~: (1) What approaches to the teaching of literacy skills to postsecondary students have been reported in the literature? (2) What ideas have emerged in the field concerning the improvement of teaching literacy skills to this population? (3) What implications can be drawn from the available literature for research and practice on improving the teaching of literacy skills to this population?

For context, we first present a conceptual framework for understanding reading and writing instruction and discuss the competencies needed in each area. We then summarize our ~~method of review~~ ~~identification of literature~~ and proceed to ~~answer our guiding questions~~ ~~a~~ ~~discussion of the research~~. ~~The paper ends with a discussion of the existing literature and~~ ~~Finally,~~ ~~we present~~ implications ~~and future directions for research and practice bearing on the teaching of~~ ~~underprepared postsecondary students for pedagogy and research~~.

### Conceptual Framework

For the current purpose, literacy is conceptualized as the reading and writing of printed words in order to comprehend and express meaning. We acknowledge broader definitions, such as those that extend beyond the processing of print to the oral skills of speaking and listening (National Governors' Association and Council of Chief State School Officers, 2010), use of

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multi-media (Gee, 2012; [Guzzetti & Foley, 2018](#); Mannion & Ivanic, 2007; [Mulcahy-Ernt & Caverly, 2018](#)), and, even more broadly, to social functioning, goal achievement and the development of personal knowledge and potential (White, 2011). However, because literacy coursework for underprepared postsecondary students centers on the reading and writing of print, we assume the narrower definition here. Traditionally, reading and writing have been taught to underprepared postsecondary students in separate courses but, more recently, in a growing number of colleges, developmental education has been reformed to combine the two areas in single courses (Bickerstaff & Raufman, 2017). In this section, we present a conceptual framework for understanding reading and writing, and their integration.

**Reading**

Reading is multidimensional, goal directed, and developmental (Alexander, 2005, 2012) and involves multiple cognitive, metacognitive, affective, and sociocultural factors working in concert (Holschuh & Lampi, 2018; Pearson & Cervetti, 2015). Layered within each of these factors are other multidimensional constructs. For example, cognitive factors include decoding, predicting, comprehending while affective factors include motivation, self-efficacy, and self-regulation. All of these processes occur within social, cultural and contextual spaces, which favors those who understand academic discourse (Gee, 2012). Reading ability develops over time and involves both learning to read and reading to learn (Alexander, 2012; Rosenblatt, 1994). Learners develop flexibility, control, and experience to maneuver within the linguistic, cognitive and sociocultural dimensions of literacy (Kucer, 2014).

~~The notion that r~~Reading is developmental across the lifespan ~~includes the idea is that~~and readers bring a variety of strategies, interests, and background knowledge to the text and that making meaning demands the ability to critically analyze and interpret text ([Alexander, 2012](#)). In

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this sense, reading proficiency may not generalize to specific disciplinary areas that demand a good deal of content knowledge (Perin, 2018).

~~By high school exit, and in readiness for college reading, students should be able to~~ Key reading competencies include understanding ~~both~~ literal and implied information in text, drawing appropriate inferences and conclusions; identify and summarize main ideas; analyzing information as it unfolds over a text; interpreting the meanings of words and phrases; analyzing text structure; understanding the purpose or point of view expressed in a text; ~~make-making~~ connections between text and their own experience; comprehending information in diverse formats and media (i.e. engage in multiple literacies, as mentioned above); assessing arguments expressed in a text; comparing information across texts; analyzing an author's use of literary devices; and understanding complex texts ~~without help~~ (National Assessment of Educational Progress, 2015b; National Governors' Association and Council of Chief State School Officers, 2010).

**Writing**

Writing has been conceptualized as comprised of two components, called “the task environment” and “the individual” (Hayes, 1996, p. 10). The task environment encompasses social aspects such as the purpose of writing and characteristics of the readership of a written text, and physical aspects including the medium, e.g., pen and paper or digital means, and the text written so far, which provides context for the writing for further composition. In the “individual” component are housed key cognitive and affective processes including memory, schema for the act of writing; metacognition; understanding of core writing behaviors (planning, drafting and revision); beliefs about writing; and motivation to write. An extension of Hayes’

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8 (1996) model includes executive functions in the self-regulation of the writing process, and the  
9 use of writing strategies (Berninger, Garcia, & Abbott, 2009)

10  
11 Skills and processes that enable proficient writing are spelling, which, ~~as with reading in~~  
12 ~~an alphabetic orthography~~, requires phonemic awareness and the mapping of sounds and letters;  
13  
14 knowledge of the conventions of a written language, including syntax, capitalization and  
15  
16 punctuation; and vocabulary knowledge (Berninger & Chanquoy, 2012; Rijlaarsdam et al.,  
17  
18 2012). Also important is discourse knowledge, i.e. awareness of the characteristics of and what is  
19  
20 involved in producing well-written text (Olinghouse & Graham, 2009).  
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24 Key writing competencies include the ability to compose text in three major genres, i.e.,  
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26 argumentative/ persuasive, informational/ explanatory, and narrative; use precise language and  
27  
28 varied sentence structure; produce coherent text that demonstrates an awareness of the  
29  
30 informational needs and basic assumptions of an assumed audience of readers; revise one's own  
31  
32 text to improve clarity; use digital technology such as the internet to communicate and  
33  
34 collaborate with others; [engage in multi-modal, non-print literacies in line with evolving](#)  
35 [practices in the 21<sup>st</sup> century](#); convey research findings; acknowledge the source of ideas, i.e.  
36  
37 avoid plagiarizing; and engage in both longer- and shorter- term writing tasks ([Guzzetti & Foley,](#)  
38 [2018; Mulcahy-Ernt & Caverly, 2018; Paulson & Holschuh, 2018;](#) National Assessment of  
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40 Educational Progress, 2012; National Governors' Association and Council of Chief State School  
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42 Officers, 2010).

### 43 **Integrated Reading and Writing**

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45 The integration of reading and writing instruction seems well supported from both  
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47 theoretical and empirical perspectives. Reading and writing are not the reverse of each other  
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49 (Stotsky, 1983) but share a number of important overlapping processes (Fitzgerald & Shanahan,  
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2000). Shanahan (2016) ~~provides a useful metaphor for the~~describes relationship between reading and writing as “two buckets drawing water from a common well or two buildings built on a common foundation” (p. 195). Further, two meta-analyses have shown mutually-beneficial empirical relationships between reading and writing (Graham & Hebert, 2010; Graham et al., 2018).

#### **Method of Review Identification of Literature**

The ProQuest, ERIC, EBSCO and Google Scholar search engines, hand-search of journals, and reference lists in identified literature were used to generate an initial pool of studies ~~to-for~~ consider-ationfor inclusion in the review. Search terms, used singly and in combination, were: developmental education, remedial\*, college, postsecondary, higher education, literacy instruction, reading instruction, writing instruction, reading skills, writing skills, integration, and integrated reading and writing. Resources meeting the following criteria were selected for review: (1) provided description, practitioner commentary, and/or data on the teaching of literacy skills to underprepared students in postsecondary education; and (2) appeared in peer-reviewed journal articles, chapters in scholarly books, or technical reports produced by reputable organizations. A parameter of the years 2000-2018 was set but a few earlier references were screened in because they offered important information not available in more recent work. The search yielded 199 studies, which were scrutinized for relevance to the current review; of these, 36 ~~(marked with an asterisk in the reference list)~~ were relevant to our guiding questions. The identified literature included empirical studies, descriptive reports and literature reviews. The work was organized by major theme, as shown in the next section. Where studies were thematically cross-cutting, they are presented below within a single theme for expediency. The large majority of studies identified were not designed as evaluations, and thus did not report

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outcome data. Where evidence of effectiveness is reported, we include it in our discussion of studies below.

### Teaching of Literacy to Underprepared Postsecondary Students

#### Overview

The purpose of developmental reading and writing courses is to increase the proficiency of college students who are underprepared for college level literacy (Paulson, 2014). Increasing the effectiveness of these courses is tied to pedagogical choices (Holschuh & Paulson & Holschuh, 2018). Although developmental educators use a variety of teaching approaches, two major approaches, discrete skills and meaning making, have been defined in the literature on teaching literacy to underprepared adults (Beder, Lipnevich, & Robinson-Geller, 2007; Perin, 2013). Though it has been claimed that many developmental education courses use a decontextualized, discrete skills approach (Grubb, 2012; Lesley, 2004; Weiner, 2002), and that when skills are taught in this way, there is little use of authentic reading materials or literacy strategies (Rose, 2005), there have been few systematic analyses of instruction in developmental classrooms or comparisons of outcomes of different teaching approaches.

One curriculum analysis found that developmental reading classes using discrete, decontextualized skills instruction may focus on finding the main idea, inferencing, examining paragraph structure while using workbook-style textbooks that feature mostly narrative text examples (Armstrong, Stahl, & Kantner, 2015). Textbooks used in these courses center on such skills, which are typically taught in isolation (Perin, 2013). This kind of “transmission” approach is held to be problematic in can leading students to use passive, surface-level strategies, to be unable to view reading as a conversation with the text, and to have difficulty adapting their reading strategies to the variety of task demands of college (Armstrong & Newman, 2011).

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Courses using a meaning-making approach focus on problem solving and critical thinking using real-world examples and text (Perin, 2018), which may help students succeed by increasing their strategic cognitive, metacognitive, and affective approaches to learning (Holschuh & Lampi, 2018; Simpson, Stahl, & Francis, 2004). Being able to use cognitive strategies such as analyzing and synthesizing text can enable students to further develop metacognitive approaches such as self-questioning, self-regulation, and self-monitoring (Alexander & Jetton, 2000; Holschuh & Lampi, 2018; Zimmerman, 1995). We now discuss the various teaching approaches found in review of the literature.

In ~~our review~~this essay, we organized ~~our discussion~~ identified studies according to the ~~following~~ themes of: teaching discrete literacy skills ~~(3 studies)~~, strategy instruction ~~(12 studies)~~, new and multiple literacies ~~(3 studies)~~, disciplinary and contextualized approaches ~~(5 studies)~~, digital technology ~~(5)~~ and integrated reading and writing ~~(8 studies)~~.

**Teaching of Discrete Literacy Skills**

Instruction in discrete skills refers to the teaching aspects of literacy such as vocabulary definitions, morphological structure of words, or “getting the main idea” without relating them to each other or to meaningful acts of written communication. In this approach, teachers may assign repetitive drills using pre-prepared worksheets. It is difficult to determine the extent of discrete skills instruction in developmental education from the research literature but, given that it has been claimed to be widespread (Grubb & Gabriner, 2013~~et al., 1999~~), it is surprising that ~~we~~ found only three studies of this approach have been conducted (Ari, 2015; Atkinson, Zhang, Phillips, & Zeller, 2014; Curry, 2003).

Ari (2015) examined the effects of two reading fluency interventions, wide reading and repeated reading. Instructional materials consisted of binders with printed materials. The

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readings were 400 words long, ~~i.e., which is~~ not representative of the longer length of text typically assigned and were not connected to the kinds of topics students encounter in postsecondary education. Students in the wide reading condition silently read four different grade-level passages and students in the repeated reading condition read one grade-level passage four times. Participants displayed gains on reading speed, but not comprehension, ~~which suggests that multiple readings without further strategic processing are insufficient for comprehension gains.~~

Atkinson, Zhang, Zeller, and Phillips (2014) found that 5 weeks of word study instruction improved the orthographic knowledge ~~of a sample~~ of developmental reading students. Explicit teaching was provided in spelling rules, suffixes, and past tense endings, using word sorts and word hunts and was designed to meet the specific needs of the participants based on their pre-test performance. The researchers found improvement in students' orthographic knowledge despite the short duration of the intervention.

An ethnography of a basic writing classroom in which discrete writing skills were taught was conducted by Curry (2003). The students were English language learners ~~and t, and although this population is beyond the scope of our review, we include it because it provides a description of discrete skills instruction in the writing area.~~ The teacher taught ~~skills such as,~~ sentence-level writing, grammar, punctuation and simple one-paragraph writing. Students were asked to write an essay and a 3-5 page research paper on self-selected topics. All writing assignments were brief and none of the instruction observed by the researcher was related to the kinds of extended writing ~~the~~ students would encounter in college coursework.

[Two possible explanations for the lack of research on discrete skills instruction with academically underprepared postsecondary students are that this approach is assumed to be](#)

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~~effective, not problematic and thus not worth studying, or, from an opposite point of viewpoint, that discrete skills instruction is so damaging that it is not worth the effort to measure its (lack of) effectiveness. Ultimately, given the criticisms of discrete skills instruction (Grubb & Gabriner, 2013), in future research, this approach could serve as a control condition to be measured against more innovative approaches, analogous to the use of conventional grammar instruction in studies of writing interventions in which the teaching of grammar has been used as business-as-usual control and found in several studies to be ineffective (Graham & Perin, 2007).~~

### Strategy Instruction

Strategy instruction involves explicit, structured teaching of specific steps for comprehending or composing text. Key components are teacher modeling and the use of graphic organizers and mnemonics to support metacognition and self-regulation. An underlying theme of strategy instruction is the gradual release of responsibility, with fading of scaffolding until the student reaches designated literacy goals (Harris, Graham, Mason, & Friedlander, 2008; Pearson & Gallagher, 1983; Walker, 2012). ~~The 12 studies we found that~~ Studies examining particular reading and writing strategies ~~have~~ reported largely encouraging results. ~~(Armstrong & Lampi, 2017; Blake, MacArthur, Mrkich, Philippakos, & Saneak Marusa, 2016; Caverly, Nicholson, & Radeliffe, 2004; Flink, 2017; Gruenbaum, 2012; Lavonier, 2016; Linderholm, Kwon, & Therriault, 2014; MacArthur, Philippakos, & Janetta, 2015; Paulson, 2006, 2014; Perun, 2015; Simpson, 1986).~~

A strategy using the PLAN (Predict, Locate, Plan, Note) mnemonic reported by Caverly, et al. (2004) focused on the selection of information while reading and involved gradual release of responsibility. Teaching began with instructor modeling and ended with students transferring the strategy to a different context. Instruction included explicit teaching of the components of

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PLAN, i.e., strategic reading strategies, metacognitive awareness, self-efficacy, recognizing text structure, and rehearsal strategies for recall. Teachers modeled the strategy using think-alouds with authentic text and supported student practice as a means to help students develop the skills to use the strategy independently in other college courses. The researchers reported increased scores on a standardized test of reading performance and comprehension and ~~were more likely to the likelihood of transfer~~ the use of the strategy ~~to in~~ other contexts.

Armstrong and Lampi's (2017) PILLAR (Preview, Identify, List, Look online, Attempt, and Read) mnemonic adds a disciplinary approach and is aimed at preparing students to read in situations where they have limited prior knowledge on a particular concept or topic. This strategy includes an online search component, which provides just-in-time information to the reader, encourages intertextual connections, and, as one student noted, "fits in with the current generation" (Armstrong & Lampi, 2017, p. 7). Instruction focuses on metacognition, specifically, conditional and contextual knowledge, by teaching why, when, and where the strategy might be useful. It also centers on explicit instruction in metacognitive awareness and self-regulation as a way to build both disciplinary understandings and proficiency with reading strategies. Instructors guide students through systematic previewing of the text, purposeful terminology selection, engaging intertextuality, and reading for meaning. Although this was not an empirical study, the strategy has strong theoretical underpinnings from previous research.

This emphasis on metacognitive and self-empowering strategies is echoed in Gruenbaum's (2012) call to incorporate reciprocal teaching into developmental classrooms. Reciprocal teaching is a well-documented ~~face-to-face~~ teaching method originally developed for adolescents ~~with low~~ to improve reading comprehension skills (Palincsar & Brown, 1984; Sporer, Brunstein, & Kieschke, 2009). Gruenbaum (2012) suggests that its combination of prediction,

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questioning, clarification, and summarization strategies can aid comprehension and increase writing ability as students work together to bring meaning to text. Instruction in reciprocal teaching includes providing scaffolding, modeling, and using specific, concrete examples of reading and writing strategies. In a study examining the effects of instructions on university students' comprehension, Linderholm et al. (2014) found that sometimes less is more ~~when it comes to providing instruction~~. When students were given instructions for reading, those that were given only a definition of self-explaining during reading of multiple texts had greater comprehension scores than students who were provided with a definition and modeling of the strategy. This result suggests that the explanation was sufficient and even preferable as providing more support than students need may actually impede learning (Holschuh, 2014).

In a study examining the effects of traditional textbook-based instruction and strategic reading instruction on reading performance, Lavonier (2016) found that both approaches improved student scores on the Nelson-Denny Reading Test (Brown, Fishco, & Hanna, 1993). Textbook based instruction involved using a traditional skill-focused textbook, with the instructor guiding students through the skills contained in the text. Strategic reading instruction was conducted using Caverly et al.'s (2004) PLAN reading comprehension strategy. Although these results are encouraging, there are limitations as there was no report on participant skill levels prior to instruction. Further, using the Nelson-Denny test as the measure of success is problematic for several reasons. It is not a particularly useful measure of real-world reading ability, some of the stimulus passages seem unreasonably difficult, the test's time limitations are unrealistic, and the norms are not nationally representative (Perkins, 1984; Smith, 1998). Further, as with many other multiple-choice reading comprehension tests, some of the items can be answered from background knowledge without reading the passages (Coleman, Lindstrom,

Nelson, Lindstrom & Gregg, 2009; Ready, Chaudhry, Schatz & Strazzullo, 2012). The problem of background knowledge is especially problematic for academically underprepared students and for students from diverse backgrounds - who often have limited background knowledge (Lei, Rhinehart, Howard & Cho, 2010), since because it is hard to interpret a test score as reflecting background knowledge (or lack thereof), or reading comprehension ability itself.

Many studies of the reading of underprepared postsecondary students have used comprehension as the indication of efficacy for a particular instructional strategy or approach. The results of such studies, however, need to be tempered not only by the criticisms just mentioned, but also because comprehension is often depicted as merely extracting information, such as writing a summary or explaining the main idea. However, current literacy standards hold comprehension as a baseline (National Governors' Association and Council of Chief State School Officers, 2010). Students need to be able to analyze, critique, argue as well. More compelling are the reading studies that showed gains on multiple outcome measures of success, such as strategy transfer, retention, course grades as well as those where instruction was contextualized within a disciplinary approach. There is also good evidence of a systematic approach to reading or writing instruction that includes a gradual release of responsibility from instructor to student, especially in the studies of strategy instruction (e.g., Armstrong & Lampi, 2017, and MacArthur et al., 2015). There is longstanding criticism of traditional reading comprehension tests, going back to the 1940s (Cronbach, 1946). The field seems ready for an overhaul of reading comprehension assessment for underprepared students, at least to bring measures closer to authentic reading practices.

Several developmental education researchers have claimed that iInstructional practices mirroring real-world reading experiences are associated with learning gains. For example, Flink

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(2017) suggests ~~that~~ allowing students to self-select their reading choices ~~will~~ improves motivation to read and ~~will~~ promotes the idea of reading daily. Instruction involves allowing time in class for silent reading and a ~~cultural-pedagogical~~ change that views ~~reading of self-selected-chosen reading-text~~ as a valuable use of instructional time (Flink, 2017; Paulson, 2006). Flink (2017) argues that ~~faculty need both to accept this approach and receive this requires~~ training in ways to incorporate reading time ~~into their~~ classrooms (Flink, 2017). Paulson's (2006) review of the literature cites barriers to implementing self-selected reading in the classroom, such as access to books and lack of a curriculum for instruction, but states there is evidence from K-12 studies that this approach yields gains in reading ability, which has potential for postsecondary settings. However, there is little empirical research on particular instructional approaches or on the effects ~~of~~ self-selected reading at the college level.

Paulson (2014) found that using analogical processes during reading, such as presenting the comparison of going to a movie and then describing that movie to someone unfamiliar with it as an analogy for reading a text and writing a summary, can help students make connections to their own knowledge and experiences while reading. Although this study focused on the efficacy of using analogies and not on classroom instruction, the results have pedagogical implications. Instructors can emphasize the importance of making connections between what they are reading and what they know. Results suggest that teaching of developmental reading designed to promote understanding embedded analogies and generating personal analogies may facilitate text comprehension.

~~A quasi-experimental study comparing self-regulated writing strategy instruction with business-as-usual developmental writing instruction was conducted by MacArthur et al. (2015). Over one college semester, teachers used a researcher-developed curriculum to teach steps for~~

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~~planning, drafting, evaluating and revising essays in combination with self-regulation strategies of goal setting, task management, progress monitoring and reflection. The major academic writing genres of persuasive, descriptive, cause-effect and narrative writing were included. Basic grammar and the use of English language conventions were taught along with editing and revision. This is a rare study in the literature for its rigor and the size of research sample (N=252, with 115 treatment, 137 comparison students). Pre-post measures included persuasive essays scored for quality, length and grammar, and a motivation questionnaire examining mastery goals, self-efficacy, beliefs and affect. Two Woodcock Johnson III (Woodcock, McGrew, & Mather, 2001) writing subtests were entered as covariates. The intervention showed positive effects on writing quality and length (effect sizes 1.22 and 0.71), mastery goals (effect size 0.29), and self-efficacy for tasks and processes (effect size 0.27) but not for grammar, beliefs or affect. A detailed description of the self-regulated writing strategy instruction tested by MacArthur et al. (2015) is found in Blake et al. (2016).~~

Strategic approaches have also been used in writing instruction. Simpson (1986) described a five-step writing strategy designed to prepare students for writing tests. Students were taught to use course texts to complete steps described by the mnemonic PORPE: Predict potential essay questions, i.e., generate questions that could be asked on essay exam; Organize key ideas ~~using own words, i.e., summarize and synthesize key ideas~~; Rehearse key ideas, ~~i.e., commit ideas to long term memory~~; Practice recall of key ideas in writing tasks; and Evaluate completeness, accuracy and appropriateness of the written product using a rubric (Simpson, 1986, p. 411). Each step was taught explicitly, with teacher modeling and class discussion.

Although test preparation may at first glance seem a limited and unproductive approach to literacy instruction, passing tests is often uppermost in the minds of postsecondary students.

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especially among developmental education students, who have a history of failing tests. Test-preparation may be a productive direction for developmental literacy instruction for underprepared students if the teaching is consistent with evidence-based approaches, such as in the writing strategy taught by Simpson (1986).

A phenomenological study of the teaching of a writing strategy in ~~three~~ developmental education classes was reported by Perun (2015). The purpose of the instruction was to improve students' ability to revise previously written papers ~~for the purpose of resubmission~~. The students were given an assignment sheet with detailed instructions on how to revise a paper, and a rubric. The students worked in small groups to annotate the assignment sheet to show understanding of the teacher's expectations. In class discussion, teachers asked the students how they would approach the task and provided evaluative feedback. Teachers modeled steps for revision on the board and had students freewrite (write continuously without concern for grammar, spelling or other writing conventions) ~~for 10 minutes~~. Teachers also gave students written feedback on drafts. This descriptive study portrayed a comprehensive strategy made up of component procedures centering on the complex skill of revision of writing.

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The pedagogy employed in the MacArthur et al. (2015) intervention borrows directly from a robust body of evidence on the effectiveness of writing strategy instruction in K-12 education (Graham, Harris & Chambers, 2016). The field of developmental education would benefit considerably from testing additional literacy strategies documented as effective in K-12 and –modifying them to build in principles of adult learning, such as tailoring instruction to students’ immediate learning needs, capitalizing on students’ motivation to learn, assumptions of adults’ self-confidence based on their family and community roles, and adults’ need for self-determination (Barhoum, 2017; Knowles, 1984).

### **New and Multiple Literacies**

In contrast to the discrete skill and strategy perspectives on literacy in postsecondary education is the new, or multiple, literacies framework, which views acts of reading and writing as socially-constructed, communicative acts rather than a demonstration of skill (Relles & Duncheon, 2018). Studies of literacy conducted in this framework tend to examine how students express themselves and communicate with each other. ~~Three studies conducted from this vantage~~

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~~point were found in the current review (Fernsten & Reda, 2011; Hsu & Wang, 2011; Relles & Duncheon, 2018).~~

Hsu and Wang (2010) investigated the use of blogs on student motivation and reading comprehension in ~~two sections of~~ a developmental reading course. The instructors used the blogs as a way for students to respond to comprehension questions, write reflective essays, and other authentic learning tasks. Blogging activities were aligned with course curriculum and emphasized critical thinking skills. Results were reported in comparison to nine sections of the same course that did not use blogs. While no differences were found for reading performance or motivation, students in the blogging group had higher retention rates. Instructor interviews indicated that they were not entirely comfortable integrating technology in their classrooms, which suggests a need for professional development.

In a description of how the multiple literacies approach can be used in ~~basic~~ writing instruction, Fernsten and Reda (2011) recommend a model of teaching using “reflective writing exercises [to help] students better understand the work of writing as they struggle to become more effective writers, negotiating multiple literacies” (p. 173). In one activity, students work together to compose a “group profile” (p. 176), the purpose of which is to help them see that they are not the only ones with writing problems and to view themselves as writers and critical thinkers. In another activity, students create “author’s notes” (p. 177) to facilitate their reflection on their writing goals and processes to create it. To guide the activity, the teacher provides 35 guiding questions, such as “What is the best thing (sentence, idea, section, etc.) in this draft? Why?” and “Where do you think readers might get stuck or need more information?” (pp. 177-178). [This descriptive work provides interesting ideas on pedagogy that could be tested in future](#)

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[studies of effective writing interventions -for academically-underprepared postsecondary students.](#)

Relles and Duncheon (2018) criticized teaching practices observed in ~~10 traditional~~ developmental writing classrooms through the lens of new literacies. They observed ~~classroom physical conditions, such as inappropriate furniture, that were not conducive to student communication, and~~ the assignment of discrete, decontextualized activities such as having students play a game involving the omission of unnecessary words from run-on sentences, designed to expose them to functional grammar. ~~They implication of these criticisms of classroom practice issuggest that students would increase their social identity as writers if instructional periods were lengthened, class sizes were reduced to allow more instructor feedback, and instructors created an environment for writing activity that promoted authentic discussion and interaction.~~

**Disciplinary and Contextualized Approaches**

On the hypothesis that connecting the teaching of literacy skills to material that is meaningful and useful to students will deepen learning, develop critical thinking skills, promote transfer of skill, and increase motivation to learn, (Goldman et al., 2016; Perin, 2011; Shanahan & Shanahan, 2012), some postsecondary developmental instructors contextualize their instruction in academic disciplinary content, such as history and science. (We use the terms “contextualized” and “disciplinary” interchangeably ~~here for the current purpose.~~) ~~Basically,~~ ~~†~~This approach gives students an opportunity to practice reading the type of materials and engage in the literacy tasks that will be expected of them in the rest of their college courses (Armstrong & Newman, 2011). Disciplinary reading strategies may be taught to college students ranging widely in literacy proficiency, ~~including the highest achievers~~ (Hynd, Holschuh, & Hubbard,

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2004), but here we discuss this approach ~~only~~ as used with underprepared students. ~~We identified 5 studies describing contextualized literacy instruction for use in a college developmental education context (Armstrong & Newman, 2011; Leist, Woolwine, & Bays, 2012; Perin et al., 2013; Toth, 2013; Tremmel, 2011).~~

Armstrong and Newman (2011) ~~described suggest the use a model of intertextuality that includes -of~~ explicit instruction to promote active reading, main idea identification, vocabulary development, and learning and study skills for application to a range of history texts, including primary and secondary sources, in a developmental reading course. ~~Students They provide a description of practical application of intertextuality both in community college and university settings where students~~ met in groups to discuss perspectives on ~~the~~ topics ~~based on~~ drawn from ~~the various the history~~ texts they were using ~~and~~ used charts and graphs to represent the various authors' views ~~and~~. ~~They also~~ wrote paragraphs and ~~then~~ essays ~~based on the history texts they were reading and discussing~~. The authors ~~discussed this disciplinary literacy instruction as an example of the application of intertextuality suggest that this model can help students in~~ developmental education ~~begin to view themselves as active participants in the reading process~~.

Leist, Woolwine, and Bays (2012) developed an assessment instrument that contained detailed instructions for applying reading and writing skills to content-area reading material. ~~Written i~~ Instructions directed students to mark and annotate the content text and then write a summary that included the main idea, supporting facts and data, the application to the subject area (history, biology or psychology), and how the material was relevant to the student. The assessment was introduced, explained and modeled and then used during a developmental reading course. Using a pre-experimental design (~~i.e.,~~ with no control group), the researchers found a statistically significant ~~6-point~~ increase on posttest scores on the COMPASS reading test

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(ACT, 2009), with greater gains achieved when more reading was assigned. This result is encouraging, except that the COMPASS outcome measure follows a conventional format test and as such is subject to the same criticisms leveled against the Nelson-Denny Test above.

Other groups can also benefit from contextualized literacy instruction appears to benefit students in multiple contexts. Although it is known that there is a gap between the literacy skills of Native American peoples and other groups in the United States, there is a severe shortage of research on reading and writing instruction for Native American students who are academically underprepared. In a rare study on a First Nation Native American group students, Toth (2013) described an approach to teaching developmental writing in a tribal community college. The course, according to the college catalogue, focused on teaching the aimed to Diné (Navajo) students who were taking the course to use standard English. As stated in the college catalogue, the course “advances “students’ abilities to write well-crafted and grammatical essays, with appropriate and effective word choice. Elements of expository prose are emphasized. Advanced grammar and other discrete skills are taught as necessary” of the Diné (Navajo) students (Toth, 2013, p. 12). In contextualization of writing instruction, the teacher explained cultural and historical aspects of language, comparison of lexical features of English and the home language. There was class discussion of history and language throughout the course. The author stated that the students’ use of conventions improved by the end of the course. Future research could expand to other areas of reading and writing instruction with academically underprepared Native American students in order to identify beneficial approaches. The Toth (2013) study suggests that contextualized approaches would be useful in this context for this population.

Other groups can also benefit from contextualized literacy instruction. In a quasi-experimental study with underprepared students in several urban and suburban community

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~~colleges~~, Perin et al. (2013) examined the effects of providing contextualized practice ~~for~~ ~~community college students enrolled in a~~ developmental reading and writing courses ~~in several~~ ~~urban and suburban community colleges~~. Participants engaged in self-paced steps to practice reading comprehension, vocabulary development, written summarization and other literacy skills before, during, and after reading science text from ~~introductory~~ anatomy and physiology textbooks or generic reading passages from developmental textbooks. Statistically significant gains were found for a key outcome variable of written science summarization measure for both contextualized conditions compared to a business-as-usual comparison condition, with greater gains for participants whose practice was contextualized in science text.

Working within a new literacies framework, Tremmel (2011) proposes a move from a traditional approach where students are taught to write 5-paragraph essays on isolated topics, to project-based literacy instruction contextualized in meaningful topics, texts and experiences both in and out of academic settings. The author gives as an example a project used in a college writing course that involves research, interviews and writing in several genres on the topic of senior citizens. Products of this experience include collaborative multi-media presentations. ~~The author Tremmel makes interesting recommendations for reforming writing instruction that could be tested in future intervention research, such as having instructors develop their own curricula, reject deficit approaches to student writing, allow students to experience more control over their own learning process, stimulate student interest in writing rather than concentrating only on the development of skill, connect academic writing to non-academic experiences, and reduce the focus on assessment.~~

**Use of Digital Technology**

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There has been considerable interest in online teaching options in postsecondary education (Kebritchi, Lipschuetz, & Santiago, 2017). ~~We found 5 studies investigating the use of various forms of educational technology in the teaching of literacy to underprepared students in postsecondary institutions (Burgess, 2009; Ingalls, 2017; Relles & Tierney, 2013; Saidy, 2018; Yang, 2010).~~ For example, with the aim of increasing motivation to read, critical thinking skills and active learning among developmental reading students, Burgess (2009) implemented a hybrid course (~~combination face to face and online~~) where the digital technology component consisted of a discussion board and online chat. Course design was based on principles of communication, feedback, and approach to learning (Testa, 2000). The discussion board was asynchronous, ~~i.e. the,~~ students submitted posts at times of their own choosing and involved engaged in collaborative work. Online chat was synchronous; here, the teacher and students engaged in discussion. Students also communicated with the teacher via email. ~~In managing the class, the teacher responded to student email several times per day, returned graded assignments quickly and asked students periodically if they had any questions or concerns.~~ The content of the reading course was not reported but the researcher reported anecdotal evidence based on examination of the discussion posts, chat interactions, journal reflections and student interviews that student motivation, critical thinking and active learning improved over period of the course.

Yang (2010) developed a web-based reciprocal teaching interface for academically underprepared English language students enrolled in a developmental reading course in Taiwan. ~~As also used by Gruenbaum (2012), but in a face-to-face context, discussed above, reciprocal teaching taught students to predict, clarify, formulate questioning about, and summarize reading passages in order to improve reading comprehension.~~ To teach ~~the these~~ skills involved in reciprocal teaching, Yang (2010) used an online dialogue box, chat room, discussion forum, and

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annotation tool. Instructors initially led the students by facilitating discussion, but their input was gradually withdrawn as students became better able to use both the technology and the critical thinking and reading processes of reciprocal teaching. A pre-experimental design showed gain on a reading test at the end of the course.

~~On the premise that developmental education teachers should not limit instruction to only one learning modality, Social media platforms may be a useful venue for developing literacy skill.~~ Ingalls (2017) examined the feasibility of using Facebook as a learning management system in a developmental writing course. ~~The course was taught in a~~ The college ~~had replaced leveled courses where with a~~ single courses ~~had replaced leveled courses~~ and a tutor was present in the classroom. Using Facebook, the teacher aimed to create a community of learners, build students' confidence in writing, promote sharing of writing. The teacher created a private ~~class~~ Facebook page and established rules of interaction. Work on Facebook replaced face-to-face attendance at times. ~~They~~ Students were required to post privately to the teacher ~~three times per week~~ and post questions to clarify ideas and understanding of assigned homework. Correct grammar encouraged but not required. Students were required to use the platform to communicate with peers and teachers throughout the course. Ingalls (2017) concluded ~~from examination students' work on Facebook~~ that this approach was feasible, and review of students' work ~~seemed to show~~ ed improved writing, grammar and spelling. Other instructors ~~in the college~~ had reservations about using Facebook, expressing concerns about security and privacy, the purpose of social networking, and its educational value; these concerns have also been expressed in other venues (Kebritchi et al., 2017). ~~It was noted, however, that the state in which the college was located subsequently created its own secure social networking tool that could be used in teaching developmental writing.~~

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~~Relles and Tierney (2013) studied~~ the use of digital material was investigated by Relles and Tierney (2013) as developmental writing students in a summer bridge program (~~see Barnett et al., 2012 for examples of this type of program~~) developed personal profiles. The course utilized an online social network platform that was similar to Facebook except that it permitted the creation of a closed community ~~where users could control the amount of personal information revealed in their personal profiles~~. The class lasted 80 hours over four weeks and took the form of an online community. In this descriptive, new literacies study, ~~conducted from a new literacies perspective~~, the authors analyzed students' digital work, including text, image, and audio and video posts. There was no description of the teaching of writing in this study, but the authors ~~made an important point about~~ discussed the importance of digital literacy ~~being important for readiness~~ proficiency for college literacy demands.

~~Also working in the context of a summer bridge program~~, Saidy (2018) conducted a case study of the use of podcasting in a developmental education summer bridge course whose purpose ~~it was to~~ purpose introduce underprepared students to the content and methods of study in the humanities through writing activity. Podcasting was used to provide opportunities for multimodal composing. A one-week (18-hour) curriculum was organized around the topic of food. The podcasting was designed to encourage struggling writers to “jump into composing and take creative risks as they navigated the transition to college writing” (Saidy, 2018, p. 262). The teacher first surveyed the students on their high school writing experiences and beliefs about writing. ~~Then~~, students ~~then~~ listened to an existing podcast and worked individually and in pairs on a script for own podcast. To develop podcast scripts, the students created an argument, identified genre elements such as opening, statistics, quotations, determination of credibility, statement of argument, analysis with evidence, and sound effects for the podcast. Based on peer

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review, the students revised their productions. Based on qualitative examination of the students' work, the author concluded that podcasting encouraged critical thinking and self-reflection and promoted audience awareness and understanding of nature of college writing.

### **Integrated Reading and Writing Instruction**

The immediate, pressing problem for the teaching of literacy to academically underprepared postsecondary students is poor outcomes in terms of course completion, retention in college programs, and college graduation (Bailey et al., 2010). Reforms of developmental education have been reported, although rarely evaluated through rigorous comparative research. Based on the available literature, reform efforts appear to center on structural rather than pedagogical efforts. A reform structure that has attracted a certain amount of attention is "acceleration," whereby students' move through developmental education is hastened through reduction of course length or number of courses that must be taken in a developmental education program (Brathwaite & Edgecombe, 2018; Cho, Kopko, Jenkins, & Jaggars, 2012; Edgecombe, Cormier, Bickerstaff, & Barragan, 2013; Edgecombe, Jaggars, Xu, & Barragan, 2014; Jaggars, Hodara, Cho, & Xu, 2015; Jenkins, Speroni, Belfield, Jaggars, & Edgecombe, 2010). Ideally, acceleration reduces potential exit points for students and offers a quicker path to credit-bearing coursework (Bickerstaff & Raufman, 2017; Gerber, Miller, Ngo, Shaw & Daugherty, 2017; Hodara and Jaggars, 2014; Jaggars, et al., 2015). One method of acceleration that has direct pedagogical implications is the integration of reading and writing courses, replacing stand-alone courses in each of these areas (Hayward & Willett, 2014; Henson, 2017; Hern, 2013; Kalamkarian, Raufman, & Edgecombe, 2015).

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~~We found 8 studies discussing the teaching of literacy in integrated reading and writing courses (Becket, 2005; Bickerstaff & Raufman, 2017; Engstrom, 2005; Falk-Ross, 2001; Goen & Gilotte-Tropp, 2003; Jaggars et al., 2015; Mongillo & Wilder, 2012; Paello, 2014).~~

~~The studies identified for this review were conducted in public postsecondary institutions, with the exception of that reported by Paello (2014), which took place in a private four year college. The Paello (2014) reported on a study in which reading and writing instruction was integrated by college-offered one level of an IRW course. Writing assignments assigning writing tasks as were~~ responses to course readings. Various types of writing were assigned, including informal blogs, and formal paragraphs and essays. Students kept “metacognitive reading blogs” (Paello, 2014, p. 127) for three weeks towards the end of the course in which they practiced writing skills by reflecting on and summarizing their reading process. Prewriting, drafting, proofreading/ revision, grammar, punctuation skills were taught explicitly in the course, which appears to be conventional practice (Grubb & Gabriner, 2014), but the metacognitive focus on students’ literacy process may help academically underprepared students make a transition from writing as an academic exercise to more authentic writing practices (Kucer, 2014).

~~In an approach to qualitative action research study, Falk-Ross (2001) described an approach to~~ integrating reading and writing instruction studied by Falk-Ross (2001). ~~The the a~~ teacher assigned an inquiry writing task for the purpose of improving reading comprehension. The topics were self-selected and mostly related to students’ college major. As part of instruction, the teacher explained the writing process. To gather information ~~for their inquiry paper,~~ students held interviews, conducted internet searches, and read journals and other texts. Reading strategies were taught and 1 to 2 hours per week were spent on writing the inquiry paper. In small group discussion, students compared their papers. The teacher held writing

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conferences and the students kept journals on their reading and writing process. The researcher's field notes, participant observation, and student reading scores suggested that the integrated inquiry activity was beneficial to students. Students demonstrated increasing awareness of connections between reading and writing and showed gain of approximately 3 grade levels on

the Test of Adult Basic Education (TABE) ~~from pre to post. Again, these appear to be promising results but the TABE outcome measure is, again, in conventional format, limiting the conclusions that can be drawn about the effectiveness of the approach.~~

~~In another approach to reading-writing integration,~~ Mongillo and Wilder (2012) ~~also integrated assigned~~ writing tasks into a developmental reading course. The ~~integrated~~ activity was conducted online through a discussion board. ~~In two homework assignments, the students were asked to post descriptions. In the first, students~~ posted anonymously a written description of an object in a picture provided by the teacher. Peers in the class were asked to select one of six provided pictures to guess picture being was described, and to state in writing why they selected that picture. The writing assignment was to write a paragraph describing a situation currently being reported in the news ~~but~~ without explicitly stating the topic. Peers in the class were asked to guess the topic based on the description and ~~again,~~ provide written explanation. Correct peer guesses in both assignments were taken to indicate good descriptive writing skills on the part of the writer. A ceiling effect of 66-100% correct guesses was found, but it is possible that the integrated activity could be useful if ~~they~~ were ~~made~~ more demanding.

~~In another version of integrated reading and writing instruction, reported by IRW model studied by~~ Becket (2005), ~~discussed a model where~~ reading and writing were taught separately, in two sequential hours. The first hour was taught by a reading teacher and the second by ~~the a~~ writing teacher, but the teachers collaborated on planning instruction to create "interactive

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discussion classes” (Becket, 2005, p. 60) that drew in both literacy areas. The focus of the writing class was essay writing. The teacher encouraged the students to incorporate personal experience but topics came from text assigned in the reading class, such as on peer pressure in education, change that represented “rite of passage” (Becket, 2005, p. 64), experience of immigration. In one writing activity exemplifying the approach used in this class, students practiced argumentative writing by applying personal experience to evaluate a television show from different perspectives. This model seems promising provided that instructors collaborate effectively to develop an integrated curriculum. For this, release time may be necessary, which may put a strain on college resources; institutional support would be needed for reforms of this kind.

In the context of institutional pressure to accelerate students’ completion of developmental education, there is often little guidance for integrating the current reading and writing curriculum, which leads some faculty to use an additive approach focusing on teaching discrete skills by adding new activities or assignments to previously used course materials without a framework for integrating the curriculum (Bickerstaff & Raufman, 2017). In a case study onf using the use of adaptive technology, such as including text-to-speech and graphic organizer software, in integrated courses for students with learning disabilities who had with low reading scores, enrolled in a college designed for students with learning disabilities, instructors combined the content from separate reading and writing courses and taught reading strategies such as selecting main idea, decoding, and understanding text coherence in conjunction with writing strategies such as summary writing, paragraph structure, and understanding rhetorical structure (Engstrom, 2005). Using a case study approach, Engstrom (2005) found that The use adaptive technologies in the context of integrated reading and writing instruction aided a range of

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~~basic word-reading skills as measured by several standardized measures, text comprehension as measured by the Comprehensive Test of Phonological Processing (CTOPP; Mitchell, 2001), the Wilson Assessment of Decoding and Encoding (WADE; Wilson, 1998), and the word-attack subtest of the Woodcock-Johnson Psycho-Educational Battery (WJ-R; Woodcock et al., 2001).~~

Bickerstaff and Raufman (2017) investigated of perceptions of integrating reading and writing courses using interviews, focus groups, and case studies. One writing instructor using an additive approach reported, “I thought, well, I’ll just keep the comp quizzes. They used to be grammar and punctuation, and I can throw the reading in. ~~So, you are just kind of throwing things in where they fit.~~” (p. 9). This approach resulted in frustration because faculty were not able to cover all of the material they had ~~previously~~ taught when the courses were ~~taught separately~~~~separated~~. Alternately, instruction that adopted a truly integrative approach to the courses were frequently structured around a theme around which all texts and tasks were centered. The themes were purposefully broad, such as ‘struggle’ or ‘success.’ Often a single anchor text was used as the basis for ~~a variety of~~ reading and writing tasks and assignments that all connected back to the theme. Many of these tasks included text-based writing assignments with strategy instruction embedded within scaffolding students to complete the writing tasks (Bickerstaff & Raufman, 2017) and decisions on integrating assignments were purposefully made (Goen & Gillotte-Tropp, 2003). Instructors using the integrative approach reported more comfort and satisfaction in teaching and increased student understandings of the relationships between reading and writing (Bickerstaff & Raufman, 2017).

Implementing an acceleration model. One a developmental program ~~integrated~~~~combined~~ five separate courses into one year of integrated reading and writing that included ~~the both~~ developmental coursework and the first credit-bearing composition course (Goen & Gillotte-

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Tropp, 2003). Instruction centered on making the connections between reading and writing explicit using a range of texts. Because instructors had a full year with the students they could introduce integrated strategies using increasingly complex material. Compared to a traditional-instruction control group, students receiving integrated instruction showed higher course pass rates, reading and writing scores and college retention rates.

Overall, research examining the efficacy of acceleration in —such as integrated reading and writing courses, has had mixed results. Although not describing classroom teaching, Paulson, Van Overschelde, and Wiggins (2018) examined the efficacy of accelerated integrated reading and writing courses in community college compared to non-accelerated developmental reading and developmental writing courses. Using 10 years of data from 1.5 million community college students in Texas, they found that students who took two separate courses (developmental reading and developmental writing) were more likely to pass their first college-level intensive reading or intensive writing course than those who took the accelerated integrated reading and writing course. They caution that the results should not be used to imply that reading and writing processes should not be taught together, but rather that the acceleration of these courses was not effective in the ways in which they were taught. An investigation of the actual teaching strategies used to integrate these two areas of literacy would help in the interpretation of findings.

### Future Directions for Changing Instruction

#### Discussion

The purpose of the current volume is to explore issues ion changing teaching practice. Two key assumptions seem to underlie this goal, first, that teaching needs to change and second, that teaching can change. In surveying the available literature on teaching of literacy to

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academically underprepared students in postsecondary education, we can hypothesize that teaching does need to change, because student outcomes for this population are historically poor. There is evidence that high-quality teaching is associated with strong student achievement (Darling-Hammond, 2000; Tyler, Taylor, Kane & Wooten, 2010), although, admittedly, such evidence comes from the K-12 arena rather than postsecondary education. There has been much interest in reforming developmental education in recent years (Brathwaite & Edgecombe 2018), but only one of eight current reforms described in a U.S. Department of Education report (Schak, Metzger, Bass, McCann & Englis, 2017); clearly involves teaching, and further, the report named one specific approach, contextualized instruction, rather than addressing the improvement of teaching as a whole.

#### **Investigations of Current Teaching Practices**

An important prerequisite of improving teaching is shared theoretical frameworks and operating principles but these appear to be lacking in postsecondary developmental education. Eight years before this chapter was written, Paulson and Armstrong (2010) claimed that the field lacked coherent theory, agreed-upon terminology, and teacher-preparation approaches. Unfortunately, this criticism is still warranted as ~~The end result is that there is no consistent research agenda or body of research that could guide the pedagogical reform of teaching in this area.~~ Instead, studies of the teaching of developmental reading and writing are generally single, isolated efforts that do not build on prior instructional research. Although developmental instructors report a need to improve pedagogy to meet students' needs more effectively (Barragan & Cormier, 2013), the research literature at present does not offer clear directions for change.

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The first step in understanding how teaching might change in order to contribute to better learning outcomes among underprepared postsecondary students would be to know what teaching is actually like at the current time. The available literature suggests presents a large number of approaches and strategies, mostly with minimal evidence, making it difficult to propose general recommendations on how the teaching of developmental literacy to this population might change for the better. Approaches reported in the literature fall into two categories, teacher actions, and student actions. Among teacher actions reported, we see vocabulary and grammar drills, explicit teaching of strategies for reading, writing or self-regulation, and integration of reading and writing instruction. Student actions include writing blogs, and posting writing to social media platforms. At the present time, there is no sign that the field is coalescing around any one approach, or that a critical mass of evidence for any one approach is developing. However, there is general interest in connecting the literacy skills being taught to authentic college level practices such as comprehension of academic text and the writing of argumentative essays; this pattern, which is consistent with a larger trend in literacy research (Purcell-Gates & Duke, 2016).

The majority of the available studies indicates an understanding suggest that reading and writing instruction that is potentially effective involves much more than teaching discrete skills. Instead, a more strategic based set of competencies teaching practices focusing more on including cognitive, metacognitive, and motivational strategies were examined provide encouraging results for instruction (Alexander, 2012; Pressley & Afflerbach, 1995), with encouraging results for instruction. Additionally, the literature suggests that student gains may be achieved within a short instructional timeframe, which is encouraging, although whether the gains hold would have to be investigated using maintenance measures. There is also good

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evidence of a systematic approach to reading or writing instruction that includes a gradual release of responsibility from instructor to student, especially in the studies of strategy instruction (e.g., Armstrong & Lampi, 2017, and MacArthur et al., 2015). Overall, current research suggests that a contextualized and strategy-based approaches have more pedagogical promise than decontextualized or discrete skill approaches, but there may be other promising pedagogical practices that are not currently reported in the literature. However, appropriate literacy assessments for postsecondary students need to be developed that move beyond the skills-based approaches of assessments such as the Nelson-Denny. There is longstanding criticism of these traditional reading comprehension tests, going back to the 1940s (Cronbach, 1946). Appropriate literacy assessments for postsecondary students need to be developed that move beyond the skills-based approaches of assessments such as the Nelson-Denny. The field seems ready for an overhaul of reading comprehension-assessment for underprepared students, at least to bring measures closer to authentic reading practices. Assessments that examine a more holistic picture of a students' literacy accomplishments can directly inform instruction and can be used to examine outcomes in a more realistic manner.

Rigorous research designs, widely considered a necessary prerequisite of improving teaching practice (Farley-Ripple, May, Karpyn, Tilley & McDonough, 2018), are sorely lacking in studies of teaching literacy to underprepared postsecondary students. The most rigorous test of any teaching practice in the literature is the quasi-experimental study of writing instruction conducted by MacArthur et al. (2015), which provides evidence for the use of explicit teaching of both literacy and self-regulation procedures to help underprepared students improve their writing of academic essays.

Observations of purposive samples of developmental education classrooms have led to conclusions that the field is marked by a preponderance of discrete skill instruction (Grubb et al., 1999; Grubb & Gabriner, 2013) and wide discrepancies between students' and teachers' definitions of good teaching (Cox, 2009). However, it is difficult to know what is being taught in developmental education classrooms when rigorous observation studies with representative samples of classrooms, teachers and students are not reported in the literature. Thus, there is a need for more research on instructional approaches in developmental literacy courses ~~in general~~. These could be either small-scale curriculum audits, similar to Armstrong, et al. (2015), or larger scale surveys as called for by MDRC (2013). A useful preliminary step would be to conduct a national survey of developmental education teachers on their classroom practices, as has been done in K-12 education (e.g., Gilbert & Graham, 2010). Such investigations would aid greatly in understanding what is working and what modifications are needed in current practice.

There have been calls to change instructional approaches in developmental education for decades. Rose (1983) argued that "a major skill in academic writing is the complex ability to write from other texts—to summarize, to disambiguate key notions and useful facts and incorporate them in one's own writing, to react critically to prose" (p. 9). This cannot be achieved using a part-to-whole approach (Grubb, 2012). Every one of Stahl, Simpson, and Hayes' (1992) recommendations for improving instruction in developmental education continue to be needed ~~changes in many classes~~. Their calls for emphasizing transfer to new contexts, helping student broaden conceptual knowledge, explicit teaching of strategies, and promoting self-regulation and metacognition align closely with the implications of the research discussed in this paper. ~~Additionally, although heuristics such as PLAN or PLAE can be effective for initial instruction, instructors need to teach more than just the procedural by emphasizing the~~

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~~underlying deep level processes rather than the surface level steps in any particular strategy (Armstrong & Lampi, 2017; Holschuh, 2014).~~

~~An implicit goal of ~~virtually all~~ of the literature on teaching literacy to academic underprepared postsecondary students seems to be to present teaching approaches that would help students learn more effectively than (usually unnamed) conventional approaches. However, the authors rarely, if ever, place their teaching approaches in the larger context of reform of K-20 teaching in general. Instructional reform across educational domains has attracted and continues to attract much attention in the education literature (Hiebert & Stigler, 2017; Sykes & Wilson, 2016; Tschannen-Moran, Hoy & Hoy, 1998); developmental education researchers would benefit from broadening their perspective to include theory and practice discussed in this larger body of literature. For example, if the teaching of literacy to underprepared postsecondary students can be improved through professional development methods, it would be useful for developmental educators to be aware of cutting edge ideas about professional development in other educational settings (see Korthagen, 2017 for an example).~~

#### **Examining Preparation of Literacy Instructors in Developmental Education**

~~There is a need to examine the instructional approaches of successful developmental education classrooms and to provide meaningful professional development opportunities for instructors as well (Bickerstaff & Raufman, 2017; Paulson, et al., 2018). One area in particular seems to need urgent attention, preparation of instructors to teach both reading and writing in integrated courses as institutions increasingly adopt the integrated approach mentioned above. Traditionally, instructors have ~~either~~ been trained ~~either to teach in~~ reading or ~~in~~ writing. Moreover, developmental reading and writing courses have ~~been~~ typically ~~been~~ housed in different departments and guided by different theoretical understandings (Paulson & Armstrong,~~

2010). To prepare instructors to teach integrated reading and writing courses, some colleges have relied on cross training between reading faculty and English faculty (Bickerstaff & Raufman, 2017). However, teaching integrated reading and writing may differ from teaching either reading or writing alone (Shanahan & Shanahan, 2012). For example, it would be important to teach text-based writing, using multiple sources as required in college education. Teaching text-based writing requires an equal focus on reading comprehension and writing skills, but it appears that few developmental instructors are prepared for this task.

There is little information on the preparation of developmental education instructors for integrated instruction or any other area of teaching academically underprepared postsecondary students. The few studies that have been conducted are in single institutions and center on perceptions of faculty and administrators in regard to professional development (for example, Elliott & Oliver, 2016), rather than being rigorous tests of professional development approaches. In fact, the field of developmental education as an area of scholarly pursuit is relatively new, even though there have been studies on the constituent population for decades. One difficulty in this field is the a disconnect between those who teach these postsecondary students, and those doing research. For example, there is currently only one Ph.D. program in developmental education in the United States (see <http://www.education.txstate.edu/ci/dev-ed-doc/about/overview.html>). Given the pressing need for better teaching of underprepared students, an important contribution of emerging scholars would be to identify effective approaches to professional development.

Such models may be adapted from the ample K-12 professional development literature. For example, investigations could focus on approaches in which teachers are included in a collaborative planning process (for example, see Miller, 2017), and the replacement of

traditional short-term presentations by outside experts by the provision of ongoing classroom observation and coaching by individuals who have credibility among the instructors who are recipients of the professional development (for example, see Matuchniak, Olson & Scarcella, 2014).

### **Examining Pedagogical Practices based on Assumptions about the Developmental Education Population**

Historically, much of the research on learners in developmental ~~reading courses~~ literacy ~~has~~ taken a deficit ~~thinking~~ approach, ~~discussing what students are lacking~~. It has been argued that this deficit thinking is “tantamount to ‘blaming the victim’”. It is a model founded on imputation, not documentation” (Valencia, 2012, p. X) and posits that the reason students do not do well in school is because they have some kind of internal deficiencies. In developmental education, these deficiencies were often described as low abilities, lack of motivation, lack of a ~~set of specific skills, to name a few~~ etc. ~~Some researchers argue that~~ Deficit thinking models ~~is~~ are a form of pseudo-science, often lacking empirical grounding and being rooted in classism and prejudice (Rose, 1983; Valencia, 2012). However, the more current developmental perspective, as indicated by the majority of the research reviewed in this review, trends away from deficit thinking when a learner struggles with reading or writing by using theoretical approaches that center on helping students understand what they can do instead of focusing on what they lack.

Several researchers argue that infusing ~~the element of~~ critical race pedagogy into developmental education coursework can create an environment that supports the success rates of historically underrepresented students (Acevedo-Gil, et al., 2015; Williams, 2013). This includes implementing a curriculum that ~~includes materials that~~ integrates culturally relevant

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~~themes and examples (Morris & Price, 2008; Williams, 2013) and). It also includes pedagogical approaches that~~ “align with a social justice lens that does not perpetuate deficit interpretations of cultural examples” (Acevedo-Gil, et al, 2015, p. 119). However, there is a paucity of research examining the effectiveness critical socio-cultural instructional approaches in developmental courses.

~~Attempts to reform teaching may be affected by changes in state regulation and legislation on ways to deliver instruction to underprepared postsecondary students (Holschuh & Paulson, 2013 Paulson & Holschuh, 2018). Often, the suggested changes center on institutional changes, such as online delivery, non-mandated enrollment (Woods, Park, Hu, & Jones, 2017), or accelerated options, rather than pedagogical choices based on assumptions that developmental courses may not be beneficial. Research is needed to explore the effects of such institutional choices on how literacy is taught to underprepared students and how that, in turn, affects student outcomes.~~

### Conclusions

Our ~~review of studies bearing on the question of~~ discussion on how teaching might change to serve the literacy needs of academically underprepared students in postsecondary education ~~indicates argues~~ points to a key problem that ~~there is~~ a wide range of instructional approaches ~~currently being used~~ in use, with no central organizing theory or theme, ~~and a general lack of supportive evidence~~. However, change in teaching approaches seems to be ~~indicated~~ needed, based on poor achievement outcomes that have been reported. It is encouraging that, underlying the purposes of virtually all of the ~~36 studies we identified, was~~ current literature ~~is~~ an interest in changing the way underprepared students are taught, with ~~many of~~ the studies aiming to illustrate specific changes. These studies can be viewed as a rich source of hypotheses

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on change in teaching practice. ~~Rationale was provided for each of the approaches we reviewed being used, and~~ The next step to advance the field would be to test ~~these practices se their effectiveness approaches using in experimental or quasi-experimental rigorous, controlled designs with control or comparison groups, research that carefully documents and compares in which both~~ the new and conventional teaching approaches, ~~are carefully documented and rigorously compared.~~ Additionally, changing teaching will depends on requires the development and testing of professional development approaches, which, given the paucity of current evidence, might be possibly adapted from the K-12 arena, with modifications that take into account the realities of teaching academically underprepared students in for postsecondary education.

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