

# Teaching and Teacher Education

## A History of Research Trends from 1970 to 2020

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*By undertaking a comprehensive analysis of the top cited research articles in teaching and teacher education over the past 50 years, this chapter identifies trends and issues in this field leading up to and including the year 2020. Data sources included articles from thirteen professional journals on teaching and teacher education. We identified the 20 top cited articles of each decade from 1970 to 2020, resulting in 120 articles comprised of empirical studies, theoretical works, literature reviews, and conceptual papers. Then, we analyzed each article individually for content and compared the articles to identify key themes throughout the decades. Results show that broad changes took place in the field of teaching and teacher education over the past 50 years. We observed the following trends: (a) increased focus on teacher education improvement and reform, including a move from focusing on teacher practice within teacher education programs toward a focus on teacher beliefs, efficacy, and attrition; (b) increased awareness of sociocultural factors within teaching and teacher education; and (c) increased acknowledgment of the unique needs of ESL students, which was reflected by changes in the field of ESL teaching. The implications of this analysis are that as teaching and teacher education evolves, and as researchers and practitioners seek for ways to further improve the field, teaching and teacher education will continue to move toward more student-centered, culturally-aware approaches.*

In this chapter, we analyze top cited research in teaching and teacher education from 1970 to 2020 in order to identify prominent themes, ideas, and methodologies. This analysis will discuss these themes, the contexts in which they were considered, and the methodologies used in the research from these articles to identify similarities and differences, overlap of content, and emerging trends. In doing so, we hope to understand the trends and issues in teaching and teacher education and to identify ways to use what has been learned over the past 50 years to enhance the future of teaching and teacher education.

Many studies, research projects, and special editions of journals or magazines have synthesized teaching and teacher education research. These efforts to synthesize previous research can be classified into two approaches, namely topic-

specific summaries and journal-specific syntheses. For example, in a topic-specific summary, Hallinger and Kulophas (2020) summarized research on leadership and professional learning in K–12 schools by conducting a bibliometric analysis. Ro (2019) focused specifically on novice teachers' professional learning in varied test-based accountability contexts by reviewing all relevant articles published in one specific journal. Although these and other examples cited below are comprehensive in their analysis of one specific topic or topics within one specific publication, to date, there has not been an analysis conducted with the intent to synthesize the literature across topics and journals surrounding teaching and teacher education within the past 50 years. Nor has there been any such review presented in which an overview of the themes or a narrative of the areas of interest in this dynamic field have been provided.

We conducted a brief meta-analysis of literature that aimed to review comparable research in teaching and teacher education. This endeavor revealed that most synthesis articles to date have focused on either a particular issue or limited time period. For example, Küçükaydin (2019) conducted a meta-synthesis that specifically addressed themes and codes of pedagogical content knowledge studies in science education. Zuga (1994) reviewed and synthesized literature published from 1987 to 1993 on K–12 teacher education in technology education. Many articles focused on a range of specific issues, including the role of international experiential learning in the multidimensional development of pre- and in-service language teachers (Çiftçi & Karaman, 2019), the impact professional learning communities have on teaching practices and student learning (Vescio et al., 2008), and the impact of language instruction (Long, 1983). While these examples provide information about specific topics, readers are not able to contextualize the relevant significance of these topics in the greater landscape of issues relating to teaching and teacher education.

In another approach to summarizing the literature, researchers conducted several syntheses encompassing articles from within one specific journal. For example, Livingston and Flores (2017) analyzed research and provided a summary of the major themes published only in the *European Journal of Teacher Education* since its first publication in 1978. In another review, Cottle et al. (2012) examined the *Journal of Technology and Teacher Education* to summarize trends and topics published during the time period from 2001 to 2010. And lastly, Rock et al. (2016) provided a summary of studies published in two journals: *Teacher Education and Special Education* and the *Journal of Teacher Education* from 1996 to 2014. Reviews of this type can provide insight into the publishing priorities of specific major journals in the field of education and may reflect the changing interests of researchers and practitioners. Yet this approach may fail to capture significant trends that were not in line with the publishing priorities of these specific journals, resulting in biases favoring the limited scope and aim of the target journal. In contrast, our research synthesized and analyzed articles from multiple journals and was not limited to specific themes or topics.

Our research adds to the findings from other research in making connections with the contexts of political, social, and educational changes (Crook, 2012). Our unique methodology has given us insight into teaching and teacher education themes from 1970–2020. The articles we analyzed used different methodologies, including empirical, theoretical, conceptual, and literature reviews. This diverse collection of articles added to our synthesis of themes that emerged in teaching and teacher education. Because our methodology was unlike any other used previously, the results contained herein provide a unique review of the evolution of teaching and teacher education over the last 50 years.

## **1970s: Student Teaching and Teacher Education, Student Achievement, and Teacher Effectiveness and Evaluation**

The top 20 most cited articles from the 1970s in teaching and teacher education represented many topics and themes. This analysis will discuss the most common themes of student teaching and teacher education, student achievement, and teacher effectiveness and evaluation. We will also consider trends from the decade and common types of research used.

### **Research Methods**

Among the 1970s top 20 most cited research articles, there were three main types of research: empirical studies, literature reviews, and theoretical papers. Of the 20 articles, about 50% were empirical research, 25% were literature

reviews, and the remaining 25% were theoretical papers. Even though theoretical papers were the least represented, two of the top five most cited articles were theoretical papers, including the most cited article, which focused on why and how to ask questions in the classroom that have a specific known answer (Mehan, 1979).

## Themes

The dataset was drawn from many prominent journals. Most of the top cited articles were published in one of three journals. The most popular journal, which published almost half of these articles, was the *Journal of Teacher Education*. The rest of the articles were split between the *Journal of Educational Research* and *Theory Into Practice*, with one article published in the *English Language Teaching Journal*.

The top 20 articles from the 1970s covered many topics, including student teaching and teacher education, teaching strategies, various forms of student achievement, teacher effectiveness and evaluation, people who influence teachers, and student-faculty relationships. The three most popular topics were student teaching and teacher education (five articles), teacher effectiveness and evaluation (five articles), and student achievement (three articles).

Even though these were some of the most common topics, the top three articles of the decade each covered unique topics not touched on in other articles. The most cited article focused on asking known questions in the classroom (Mehan, 1979), the second focused on morals and how or if they should be taught in the classroom (Kohlberg & Hersh, 1977), and the third focused on the adoption of new innovations (Hall et al., 1975).

## Student Teaching and Teacher Education

Twenty-five percent of the most cited articles from the 1970s focused on student teaching and teacher education. Of those articles, each took a slightly different perspective of an aspect of student teaching or teacher education. Doyle's (1979) article focused on discovering what factors impact student teachers as they start teaching in the classroom. He asserted that understanding the classroom environment first was essential for student teachers to develop the skills needed to meet the demands of the class. Once student teachers understood the complexities within their classrooms, they could use Doyle's five strategies to successfully adapt to their students' needs—chunking, differentiation, overlap, timing, and rapid judgement (p. 54). Doyle's research was influential because it identified key skills teachers learn over the course of their careers and discussed how student teachers can implement those skills when they are introduced into a classroom.

Two other articles on influences in student teaching were published in the 1970s. Hoy and Reese (1977) studied how student teachers changed in their orientations and outlooks over the course of student teaching, finding that student teachers were heavily influenced by the bureaucratic organization of the schools they taught in. In contrast, Karmos and Jacko (1977) researched the effect that significant others have on student teachers. Their findings suggested the significant others in student teachers' lives had a considerable influence in the following areas: personal support, role development, and professional skills. Both studies provided insight into the external factors that impact student teachers' self-concept.

Another article from the 1970s that focused on teacher education was Shavelson's (1973) article on decision-making, teaching skills, and teacher education. Shavelson studied how licensed teachers make decisions, including those in preservice teacher education, and he proposed decision-making was the skill all other teacher skills were based on. He also suggested decision-making be included as a component in teacher education (p. 149). Shavelson's work, along with many of the other articles from the 1970s, sought to understand the aspects that influence student teachers and teacher education. These researchers laid the groundwork for improving teacher education in later decades.

## Student Achievement

Student achievement was also a common topic in the research. Good (1979) wrote an article that considered what impact teacher effectiveness had on student achievement. He found that teachers needed to have a minimum level of ability and teaching skill to be effective in the classroom, but all teachers did have an impact on student achievement. Teachers who had good classroom management skills had a higher positive effect on student achievement, and

teachers who used direct instruction also had a positive impact on student achievement. Good's research showed the influence teachers have on student achievement. His conclusions supported other findings from the 1970s that identified gaps in teacher education and advocated for improvements to teachers' training.

Other articles from the 1970s focused on students' behavior in relation to their academic achievement. These studies researched math achievement between boys and girls (Hilton & Berglund, 1974) and note-taking by college students (Locke, 1977). Hilton and Berglund concluded that student interest in a subject was related to achievement, while Locke reported lecture engagement was related to achievement. Both articles emphasized students' individual responsibilities, rather than teachers' responsibilities, for their education. This research supported other studies from the decade that sought to understand the factors involved in students' academic success.

## Teacher Effectiveness and Evaluation

As mentioned above, one article by Good focused on the impact of teacher effectiveness on student achievement. But there was also an article by Good and Grouws (1977) that discussed different skills teachers should have that can increase their effectiveness. The researchers studied fourth-grade math teachers to examine teacher effectiveness measured by student behavior and test scores. This study identified six findings strongly associated with teacher effectiveness: (a) student-initiated behavior, (b) whole class instruction, (c) clear instructions coupled with timely feedback, (d) a relaxed yet task-focused learning environment, (e) high expectations for student performance, and (f) an absence of major behavioral disorders in the class. Good and Grouws's research highlighted changes teachers could make in their classrooms to benefit students.

In contrast, Berliner (1976) focused on the problems with teacher evaluation practices during the 1970s. He discussed flaws with the ways teachers were being evaluated, and he proposed six main issues with teacher evaluation methods. Those issues were broken up into problems with the dependent variables and independent variables. Dependent variable issues included problems with standardized testing, tests for special teaching units, and multivariate outcomes. Independent variable issues included the appropriateness of teacher behavior (changes when observers are there), the unit analysis, and the stability of teacher behavior. Berliner suggested steps researchers could take to solve the problems undergirding teacher evaluation and effectiveness, as well as what needed to happen in education research to redefine the relationship between teacher behavior and student achievement.

## Discussion

This analysis shows that the 1970s witnessed an emphasis on student teaching and teacher education research. Researchers studied what made effective student teachers (Doyle, 1979), how licensed teachers were teaching and planning (Shavelson, 1973; Yinger, 1979) and how to incorporate that research into preservice teacher education programs. There was equal focus on student achievement and teacher effectiveness.

## 1980s: ESL, Changes in Teacher Education, Teacher Efficacy, and Teaching Methodology

An analysis of the most frequently cited articles on teaching and teacher education written in the 1980s yields a range of topics, ideas, and methodologies. Out of the 20 articles, 11 researched English as a second language (ESL) teaching methods and theory. The theme of teacher education comprised five articles and centered mainly on change and reform within the university setting. Three articles were concerned with teacher efficacy, and one article dealt with a specific teaching methodology called "wait time," although teaching methodology was also a secondary topic found in the ESL articles.

## Research Methods

Methods used for research during this time period fell into three categories: (a) empirical studies, which included quantitative, qualitative, and mixed method studies; (b) literature reviews in which a review of previously completed

studies was analyzed for content and implications; and (c) theoretical analyses, or papers which discussed a topic and the theory supporting or refuting it. Of the 20 studies, 11 were empirical, five were literature reviews, and four were theoretical. The emphasis on empirical studies, particularly within the theme of ESL, suggests a strong push to understand which practices best met the needs of English language learners (ELLs) at the time. It also shows that a change was occurring in the ESL environment during the 1980s. These empirical studies utilized a variety of quantitative and qualitative methods. Some studies consisted of large groups of ELLs, and some consisted of small sample sizes. Procedures included questionnaires, surveys, interviews, observations, recordings, and studies of ELL writing samples. This emphasis on ESL empirical studies carries over into the literature review studies, three of which consisted of analyses of empirical studies devoted to second language acquisition. The four theoretical studies, on the other hand, focused primarily on teacher education.

## Themes

### English as a Second Language

Interestingly, the topic of English as a second language, second language acquisition, or second language (L2) teaching strategies comprised over 50% of the top cited articles from the 1980s and over 20% of the total number of articles analyzed for this chapter. This could be due to what the United States Census Bureau terms the "Second Great Wave" of immigration (Greico, 2014). According to census data, the number of foreign-born residents of the United States quadrupled after 1970, and the number continued to climb for the next four decades. Educators in the 1980s responded to students' need for ESL instruction by utilizing a variety of methods in the classroom, and educational researchers worked to identify the best methods for this instruction. It is clear that the ability to effectively teach second language learners was foremost in the minds of education researchers. The following is a discussion of each of the topics within the theme of ESL.

A variety of ESL teaching methods were discussed including language instruction, group work, and student–teacher interaction. Long (1983) reviewed 12 studies to determine whether or not classroom instruction, as opposed to simple exposure to the language as spoken by native speakers, was actually helpful or harmful in second language acquisition. He concluded that second language instruction does make a difference, noting that six of the 12 studies showed that instruction did make a difference. Five studies provided either ambiguous or null findings, and Long argued those results could have reflected the efficacy of instruction. The final study was disregarded by the researcher because all subjects received the same amount of instruction. Long and Porter (1985) tackled the idea of group work in second language acquisition by analyzing the pedagogical and psycholinguistic evidence of the value of group work as methodology. Their focus was on comprehensible input and output that occurs with both nonnative/nonnative and native/nonnative conversation. This study focused on "interlanguage talk" or communication between two or more nonnative speakers in the second language. Results indicated that when class structure was carefully planned, group activity was a preferable alternative to teacher-led discussion. Methods of student–teacher interaction were further explored by Pica et al. (1987) as they compared the comprehension of native speakers when given a task by a teacher. They found that comprehension was highest when the direction was repeated and rephrased but was not significantly impacted when the linguistic complexity was reduced. These studies indicated that educators in the 1980s were highly interested in determining effective teaching methodology for second language acquisition.

The nature of the composition process and the impact of educator feedback on student writing was of interest to educational researchers in the 1980s. Zamel (1985) and Robb et al. (1986) analyzed the impact of error correction on ELLs. Robb et al. found that ESL teachers focused predominantly on mechanical errors in writing, whereas teachers of other subjects focused on content and argumentation. Zamel's findings were similar, noting that ESL teachers focused on "language-specific" or "sentence level" errors. Both studies explained that ESL composition teachers rarely viewed ESL students' writing as a "work in progress," instead giving feedback as if the draft was the final composition, "thus reinforcing an extremely constricted notion of composing" (Zamel, p. 79). This built upon Zamel's previous research on the composing processes of ESL students in which she found that ESL writers clarify ideas and correct language-related errors after their ideas have been delineated (1983). She questioned methodology in ESL writing instruction that

was overly concerned with correctness. This work provided a closer look into how previously accepted methodologies surrounding second language instruction were being questioned.

In addition to methodology, the age at which a student first began studying a second language and the length of time they engaged in the study were also of importance to education researchers in the 1980s. Some questions in this vein included the following: "How long does it take to master a language?", "Is it easier for young children to acquire a second language?", and "How long does it take to master the language at a level of proficiency to positively impact academic achievement?" (Collier, 1987, 1989). Collier's findings indicated that contrary to popular thought, the youngest students were not at an advantage when compared to their older peers. Her results in a study of over 1,500 students indicated that limited English proficient (LEP) students who began L2 study between the ages of 8–11 were the fastest achievers, requiring two to five years to achieve the 50th percentile on national tests (Collier, 1989). Younger students (5–7 years) were one to three years behind this performance, and older students (12–15 years) were the most disadvantaged. Taken in concert with other studies regarding teaching methods, the understanding of how a student's age and length of study impacted success at acquiring a second language gave significant insight in how best to help ELL students be successful in acquiring a second language and performing in other academic areas.

In contrast to previous research in the decade, one highly cited theoretical article from the time argued that the positivist and progressive orthodoxies of linguistics should be challenged (Pennycook, 1989). This research asserted that the primary focus on methods maintained inequities in the education realm. This is a noteworthy digression from the abundance of discussion on ESL teaching methodology. This article was published at the end of the decade and was a precursor for more interest in this topic in the 1990s.

## Changes in Teacher Education

During the 1980s, seeds of doubt regarding traditional training methods for teachers were beginning to sprout. Two articles focused on theory and literature advocating reforms. Zeichner (1983) argued that there was a lack of open debate over the goals and purposes of teacher education and that the models of teacher education utilized during that time were narrow in scope and closely tied to dominant paradigms. He advocated for discussing desirable teacher education practices and proposed a range of alternative paradigms from which to approach teacher education. This furthered the research started at the beginning of the decade when Zeichner and Tabachnik (1981) posed questions surrounding why progressive ideologies presented to teacher education students at the university level were then "washed out" by the time student teachers and new teachers began to practice at the school level. By analyzing three views on the influence of the university on teacher attitudes, the conclusion the authors made was that new teachers were not only influenced by the school setting but also by the years of teaching examples they received prior to entering a university-level teacher education program. They concluded that it could not be assumed that the role of a university was a liberalizing one. The implications were that teacher education reformers needed to focus more on the university setting rather than on the school setting.

In 1989, the idea of reflective teaching was emerging as an important aspect of teacher education reform. Calderhead (1989) urged further examination on teacher cognitions, knowledge, and learning context in order to understand the role that reflective teaching had on teacher education. During this time, ideas encompassed within reflective teaching such as growth through critical inquiry, self-directed evaluation, and self-analysis were being compared with widely used teacher education content such as behavioral skills and teacher craft. Calderhead's work was a call to action to develop an improved understanding of the nature of reflection and its potential in teacher education.

In addition to Calderhead's findings, a study analyzing the results of questionnaires given to 113 university education majors regarding their own preconceptions of teaching and what makes a "good teacher" gave a broad understanding of how those approaching teaching as a profession viewed themselves and teaching in general (Weinstein, 1989). Findings from this study indicated that education students had a strong form of "optimism bias" in which they viewed themselves as very competent compared to peers and other educators. Their answers indicated that they did not highly value content knowledge, academic performance, or IQ as a standard of good teaching but instead leaned favorably toward social and affective variables such as caring and concern for children, ability to relate to students, patience, and

enthusiasm. The responses of teacher education students were compared to those of in-service teachers, with nearly opposing results. This study would have had direct implications on the movement to reform teacher education in favor of more reflective teaching and more culturally aware teaching that would later grow in the 1990s.

Although mentoring is not specific only to teacher education, the idea of mentoring did appear toward the end of the decade. Anderson and Shannon (1988) discussed mentoring as a way to guide new teachers. Their research indicated that before effective mentoring programs could be implemented, basic functions of mentoring must be defined. Their research focused on five main areas: teach, sponsor, encourage, counsel, and befriend. A thorough analysis of theory behind mentoring and the disposition of mentors was also provided. The inclusion of mentoring as a methodology in teacher education supports the idea that new ideas on how to improve teacher education were being explored.

## Teacher Efficacy

Three articles discussed teacher efficacy, or the concept of a teacher's belief in their own ability to be successful in the classroom. These articles focused on the idea that teacher efficacy had an impact on whether or not a new innovation could be successfully implemented in a school. Stein and Wang (1988) analyzed the relationship between teacher success in implementing an innovative program and teachers' perceptions of self-efficacy and the teacher-perceived value of the program. They found that teachers' self-efficacy contributed to the motivation of teachers to implement a new program. Guskey (1988) also found a strong relationship between teachers who exhibited a high level of personal efficacy and the likelihood of implementation of new instructional strategies. Both of these studies addressed implications on school change and innovation in teaching. These studies would most likely have influenced those who sought to change teacher education programs or in-service practice.

Teacher content knowledge and its impact on a teacher's self-efficacy was another topic of interest. Smith and Neale (1989) analyzed the views and behaviors of 10 teachers during a four-week summer school training on implementing a new science curriculum which utilized a conceptual change approach. Recognizing that the approach was new, the authors (also the designers of the curriculum) wanted to ensure that it would be successfully taught. This study provided a good example of how teacher efficacy affected new curriculum implementation. Throughout the four-week summer school training, teachers were provided opportunities to understand the new program and the content. After the training was completed, teachers expressed their confidence in their ability to implement the program. This was in contrast to the start of the training when 90% of the teachers expressed that they did not have confidence in their content knowledge and therefore did not believe they could successfully implement the program. Although self-efficacy was not a direct measure of the study, this study did indicate that self-efficacy had a direct impact on whether or not teachers successfully implemented innovative programs.

## Teaching Methodology

Researchers approached teaching methodology in a variety of ways throughout the decade. Because there was such a focus on ESL, many of the articles on teaching methodology were found within the ESL articles and dealt primarily with the best ways to help ELLs become proficient in English. However, one frequently cited article dealt with wait time, or the amount of time a teacher would wait after posing questions to students or the amount of time a teacher would allow between student responses without interjecting (Rowe, 1986). This literature review documented research on the impact of wait time on student engagement and response in the classroom. The author concluded that when wait time was increased, a variety of positive student behaviors were observed.

## Discussion

The 1980s were a precursor to a variety of changes in teaching and teacher education that occurred during the 1990s. Education researchers were intent on finding the best way to help English language learners succeed academically, but there was not yet a focus on how to do this and maintain a respect for a student's primary language, culture, and ethnicity. Teacher education researchers were looking for ways to reform teacher education. Ideas in teacher efficacy, reflective teaching, and mentoring were also being explored.

# 1990s: Language Learning, Home and Culture, and Education Improvement

In a review of the 20 top cited articles related to teaching and teacher education from the 1990s, a variety of research methodologies were represented, and a few clear and distinct themes were present. In many ways, the themes coincided with those from the 1980s. For example, in the 1980s, the majority of articles focused on ESL teaching and theories. That trend continued in the 1990s, where seven of the 20 articles focused on language learning. Likewise, there seems to have been a continuous effort during the 1980s and 1990s to examine teacher education where many suggestions for improvement emerged. In both the 1980s and 1990s, there was an increase in female and international authors compared to the 1970s. Two very noticeable thematic departures from previous decades that were specifically noted in the 1990s included a focus on race and ethnicity and home and community as determinants of teaching and teacher education.

## Research Methods

In the 1990s, various research methodologies were used in the top cited articles that can be categorized into four types: empirical studies, literature reviews, theoretical or reflective papers, and conceptual pieces. The majority of the articles were empirical (11 of 20) and used quantitative, qualitative, and mixed methods, with most being qualitative. Eight articles were either conceptual (synthesizing knowledge from previous research and giving way for new research to fill the knowledge gaps) or theoretical (offering suggestions or solutions to educational dilemmas or challenges). Only one of the articles was a literature review.

## Themes

We identified three prominent themes from the top cited articles in the 1990s: language learning, the impact of socioeconomic status (SES) on student learning, and general strategies to improve teacher education.

### Language Learning

In the top cited articles of the 1990s, language learning was one of the major themes in over one third of the articles. There were different points of focus in each article. For example, Peirce (1995) collected data from immigrant women to use in conjunction with knowledge of social theory to argue that current conceptions of the individual in second language acquisition (SLA) needed to be reconceptualized. Freeman and Johnson (1998) explored the idea that historical and theoretical traditions had defined TESOL and examined the need to reconceptualize the knowledge base of teacher education. Another article discussed common attitudes toward language and explored the need to have a positive image of second language users (Cook, 1999). Finally, another examined the influence of social order on English language teaching (ELT) practitioners' decisions in the classroom and how those decisions shaped attitudes, assumptions, and beliefs in learners and language planning and policy (Ricento & Hornberger, 1996).

In several language learning articles, there seemed to be a link between culture and language learning. Green and Oxford (1995) called for further research about the specific patterns of language learning strategies found in Puerto Rico that could be generalized to other geographical and cultural settings. Silva (1993) discussed a need to develop theories and practices that adequately address the multilingual and multicultural perspective of L2 writers (Silva, 1993). In addition, Rampton (1990) analyzed the complications of sociolinguistic situations and examined the links between people and language and the need to use more culturally appropriate terms.

### Home and Culture

A second theme that emerged was the impact and influence of socioeconomic factors such as race, culture, and family structure on teaching and teacher education. In a study of Mexican communities in Arizona, the primary purpose was to draw upon the knowledge and skills found in local households. Moll et al. (1992) suggested that some students' households that are usually viewed as poor actually contain ample cultural and cognitive resources with potential utility

for classroom instruction. By capitalizing on household and other community resources, educators could organize classroom instruction that far exceeds the quality of instruction these children commonly encounter in schools.

In another article, Caldas and Bankston (1997) explored how the socioeconomic status of a student's peer environment at school influenced achievement, regardless of individual social status. Later in the decade, Desimone (1999) found how the effects of parental involvement in childrens' learning vary across racial, ethnic, and economic backgrounds to help bridge the gap in educational disparities. Ladson-Billings (1995) discussed the need to understand better the practice of successful teachers of African American and other minority students.

## Education Improvement

A third theme focused on general strategies to improve or reconceptualize different teaching and teacher education components. For example, it was suggested that teachers continue to value professional teacher preparation while training on the reflective process and gaining practical knowledge and insight (Van Manen, 1995). Also, classroom instruction could be organized more effectively by taking advantage of household and community resources in innovative ways (Moll, 1992). Calderhead and Robison (1991) found that a student teacher's previous knowledge impacted their teacher education experience by influencing what they learned and what they extracted from their courses and training. They suggested that continual research in this area could improve students' training and education by enlarging their current understanding with more profitable and constructive training for student teachers. Other strategies to improve teaching and teacher education focused on recognizing the emotional labor required in teaching, including emotions associated with educational reform, because teaching cannot be reduced to technical competence or clinical standards (Hargreaves 1998). These strategies for education improvement laid the groundwork for continuing research in following decades.

## Outlier

There was one study from the 1990s on bullying. Although it is not easily categorized into one of the major themes of the 1990s, it is important to recognize this article given how an emphasis in research on bullying increased in subsequent years. The study results found that bullying occurred twice every hour in each classroom. In addition, boys and girls were bullied at the same rate. It also suggested that bullying could be related to classroom activity and individual characteristics of children involved in the bullying (Atlas & Pepler, 1998). This topic, while unique among the other top cited articles of the decade, is useful in understanding the various influences in education research during the 1990s.

## Discussion

Research in the 1990s shifted toward students' experiences in the classroom. The main themes of language learning, home and culture, and teacher education improvement had a strong emphasis on improving instruction and education for learners. These themes continued into the 2000s, including an increased focus on teacher improvement.

## **2000s: High-Quality Teacher Education, Professional Identity, and Teacher Change**

The top cited articles from the 2000s continued to emphasize major themes in the field of teacher education research. The research themes from this decade focused on identifying challenges teachers face and providing solutions to those challenges. These articles emphasized research that aimed to improve teachers' education and professional experiences, which was a trend that extended into the following decades.

## Research Methods

During the 2000s, a shift occurred in research methods used in the top cited articles. The previous three decades were heavily influenced by empirical studies, as the majority of the top cited articles in each decade fell within this methodology. However, the majority of the articles during the 2000s were theoretical studies: 12 were theoretical, 3

were empirical, 3 were literature reviews, and 2 were conceptual. The following themes show much of what was discussed in the theoretical studies.

## Themes

Three main themes emerged from the 20 top cited articles in this decade. The most prominent theme was high-quality teacher education. The articles in this category emphasized maintaining quality in teacher education. The second theme was professional identity, which focused mostly on novice teachers and how their professional identity was created. And the third major theme was teacher change, which sought to create models that tracked teacher improvement over time. Each of these themes is described in more detail below.

### High-Quality Teacher Education

Seven of the 20 articles had topics related to maintaining high-quality teacher education. Darling-Hammond addressed the issue directly with her article about constructing 21st-century teacher education (2006). In the introduction to the article, she stated that much of what made a teacher successful was invisible to the common observer, leading the common observer (or policymaker) to think that teaching was easy. She warned of the dangers of this type of thinking, stating that watering down teacher education to get more teachers in the profession will ultimately have a negative impact on student outcomes. Darling-Hammond pointed to incentives from the U.S. Department of Education that amplified the problem by encouraging faster, easier ways to credential teachers. These incentives ignored the complexities of teaching and produced weak programs that underprepared teachers, especially for urban school environments.

Other articles in this category attempted to define a good teacher through different lenses and then suggested models to help identify training that would create good teachers (e.g., Korthagen, 2004; Loewenberg Ball & Forzani, 2009; Grossman et al., 2009). Loewenberg Ball and Forzani (2009) echoed the words of Darling-Hammond when they stated that teaching is not natural and that it is intricate work. They stated that teaching is not improvisational but instead a series of skills that could be identified and practiced.

One last note in this category is that the first two studies in the decade had a subtheme of preparing teachers for culturally aware teaching (Gay, 2002; Sleeter, 2001), but the next five studies were more general in discussing teaching as a whole. This will be explored further in the discussion portion of this decade.

### Professional Identity

Another theme that emerged between 2004 and 2007 was the theme of professional identity. Beijaard et al.'s (2004) study was the first of the top cited articles to address this theme. Their article was a literature review of studies from 1988–2000 that explored professional identity. The authors analyzed 22 studies and categorized them into three areas: (a) studies in which the focus was on the formation of the teachers' professional identity, (b) studies in which the focus was on the identification of characteristics of teachers' professional identity, and (c) studies in which stories depicted the teachers' professional identity. The final part of this study identified areas that can be improved in further studies of teachers' professional identity. Some of these areas include clarifying terms such as "identity" and "self," ensuring the focus is on professional identity and not on personal identity, and clarifying what counts as professional.

The other studies in this category researched novice teachers and the development of their professional identities. Flores and Day (2006) discussed how identities are built and rebuilt over the first two years of a teacher's career. Fourteen brand new teachers were chosen for the qualitative study to find what was shaping their professional identity. The results of the study showed three main influences on the construction, deconstruction, and reconstruction of their professional identities: prior influences, initial teacher training and teaching practice, and contexts of teaching.

A third study in this category tried to identify sources of self-efficacy beliefs from both novice and experienced teachers (Tschannen-Moran & Hoy, 2007). The researchers studied survey data and found that experienced teachers drew upon experiences of success for their self-efficacy beliefs, while novice teachers drew upon availability of resources and support from other teachers.

## Teacher Change

The final category for the 2000s was teacher change. Guskey's (2002) article provided support for a method of professional development that was first suggested in 1986. The method was based on the order in which teachers adopted three main components: professional practices, beliefs, and understanding of teachers. Guskey explained that professional development was often based around getting teachers to try a new method before they actually "bought in" to the new method. However, getting teachers to believe in the effectiveness of a new method before they tried it in their classrooms was more effective. Another article on teacher change was published by Korthagen (2004). He proposed six levels of change that should be considered in education. The six levels were environment, behavior, competencies, beliefs, identity, and mission. He suggested that if teachers were aware of these levels and sought to fulfill them for themselves, then they would also help their students do the same.

## Discussion

The major takeaway from this decade is that many of the most cited articles of the 2000s dealt with maintaining the integrity of the teaching profession. While most articles did not cite specific reasons for focusing on the integrity of the teaching profession, Darling-Hammond (2006) pointed to the U.S. Department of Education's No Child Left Behind and Highly Qualified Teachers initiatives as reasons of the topic:

However, in recent years, under pressure from opponents of teacher education and with incentives for faster, cheaper alternatives (see, e.g., U.S. Department of Education, 2002), teacher education as an enterprise has probably launched more new weak programs that underprepare teachers, especially for urban schools, than it has further developed the stronger models that demonstrate what intense preparation can accomplish. As a result, beginning teacher attrition has continued to increase (p. 302).

Many in the profession felt the need to defend themselves and to raise awareness of the complexities of teaching. There was concern that if the quality of teaching decreased, achievement gaps would increase between urban schools and other areas. This seemed to be the most significant area of concern for teaching and teacher education in the 2000s.

## **2010s: Transition in Teacher Education, Digital Literacy, and Teacher Identity**

Articles from the early 2010s continued to build upon the theme of teacher identity from the 2000s. Three articles published in 2010 and 2011 discussed the topic of teacher identity and beliefs. New topics such as the effectiveness of teacher education, digital literacy among teachers and students, and educational technology also emerged during this decade.

## Research Methods

The 20 most cited articles in the 2010s utilized a variety of research methods. This decade saw a split between empirical research (nine articles) and theoretical work (four articles), as well as a split between literature reviews (four articles) and conceptual works (three articles). The majority of the empirical studies utilized qualitative research methods with surveys as the main driver for data collection. Notably, four studies focused on a specific project and international context, surveying a large sample of Norwegian teachers to collect data. While the majority of the empirical studies were qualitative, three of the empirical studies utilized quantitative methods.

## Themes

The emergent themes observed in these articles fell into three main categories. Reconceptualizing teacher education was the most prominent theme in the 2010s, comprising eight of 20 articles. Within this theme a range of topics were discussed, including the structure of teacher education, international teacher education, and what the focus of teacher

education should be. The theme of digital literacy or technology integration was another theme that was common, with educational researchers working to understand how the prevalence of technology use impacted student learning, as well as how teachers practiced in the classroom. Teacher identity was a third theme that was well-researched, with the focus being on teacher diversity and teacher beliefs. Woven among these themes were some common topics such as content knowledge, professional development, and teacher burnout.

## Reforming Teacher Education

As in other decades previously explored, the subject of improving teacher education was prevalent. Education researchers felt a need to find ways to improve teacher education by analyzing current methods and by reviewing teacher education techniques being used around the world. Comparisons were made between university teacher education programs in the United States and those in other nations. One notable study compared teacher education practice in the United States to those in Finland, Singapore, Australia, and Canada (Darling-Hammond, 2017). This study showed that high-achieving nations are doing more than the United States to recruit and train top-performing teachers. These nations' programs promoted a high level of teacher preparation and professionalism, including requiring advanced university degrees, compensating with high levels of pay, and fostering esteem for teachers among the general population. The author showed that the teacher education efforts in these nations resulted in higher student achievement and greater equality in education. Darling-Hammond contrasted these techniques with those in the United States in which incentives for quick licensure were being used to recruit new teachers, which had a detrimental effect on the quality of education in U.S. schools. She also previously discussed the practice of alternative certification programs in an article emphasizing the importance of quality teacher education to the United States' educational future (2010). This analysis sought to identify how to effectively use practice as a learning tool for new teachers.

Structure and content within teacher education was also a priority for teacher education researchers in the 2010s. The idea of rethinking how campus courses and field experiences worked to train teachers was discussed by Zeichner (2010). He advocated for creating a "third space" to bridge the gap between the university and real-world practice. Zeichner (2012) also warned that the focus on practice-based teacher education may result in disregarding important aspects of teaching such as the historical, cultural, political, social, and economic contexts in which teachers practice. Again, much of this concern came from the movement toward a competency-based and fast-paced teacher licensure route.

The idea of change or redirection within teacher education programs was considered during the 2010s. Kleickmann et al. (2013) analyzed structural differences within teacher education and the subsequent impact on math teachers' content knowledge (CK) and pedagogical content knowledge (PCK). Their study noted differences in the CK and the PCK between European teachers who taught students who were placed in an academic track school (a school where students planned to attend university after secondary school) in comparison with those who taught at a non-academic track school (a school where students did not plan to attend university, but instead they prepared to study trade or skilled labor jobs in postsecondary school). It was observed that teachers' general CK and PCK was directly impacted by their placement. Those practicing in an academic-based school exhibited greater acquired CK and PCK. In addition, a review researched the findings of 110 studies regarding professional development in teacher education, and it was concluded that teacher education had moved away from a traditional in-service training model (Avalos, 2011). Some researchers asserted that by centering teacher education around core practices, the important work of justice and equity in education was being pushed to the periphery. McDonald et al. (2013) criticized the core practice movement and called for (a) recognition that core practices undermined the purpose of public schools; (b) a re-emphasis on the social, cultural, political dimensions of teacher practice; and (c) a re-centering of the educational system on justice with a willingness to recognize historical oppressions and a consideration of how core practices might misalign with equity. Similar research was published in 2019, showing that the movement against core practices and toward a critical theory-based teacher education system had built momentum during the decade (Philip et al., 2019). However, the wide variety of topics found within the theme of teacher education in the 2010s shows that teacher education is complex.

## Digital Literacy

An important theme discussed in educational research in the 2010s was digital literacy. While the use of technology in the classroom was not new to the decade, education researchers were trying to determine the best ways to integrate technology in the classroom, to provide training on using technology in teacher education programs, and to instruct digitally literate students. Kirschner and De Bruyckere (2017) argued against the belief that students in the 2010s were "digital natives" with inherent digital capabilities. Their work refuted the idea that these students were multitaskers who were able to complete competing tasks digitally without any detrimental academic impact. Their research showed that digital multitasking actually reduced focus and that students of the 2010s, while more digitally literate than previous generations of students, did not inherently know how to use technology to improve their own academic experience. Educational researchers recognized that students needed digitally competent teachers and that in many ways teacher education programs were not meeting these demands. Instefjord and Munthe (2017) found a gap in the amount of training preservice teachers received and what was actually needed in the classroom. Their empirical study analyzed the results of a survey completed by 654 preservice teachers, 387 teacher educators, and 340 teacher mentors throughout Norway. They found that there was a correlation between teachers' professional digital competence and the digital competence of their teacher educators and mentors. Preservice teachers and teacher educators ranked themselves in a similar fashion in terms of digital competence (medium proficiency), and mentor teachers ranked themselves as having a high amount of digital competency. The authors advocated for greater digital proficiency among teacher educators in order to increase digital proficiency among preservice and new teachers. Similar findings were reported by Gudmundsdottir and Hatlevik (2017) who determined that newly qualified teachers reported poor quality and contribution of information and communication technology in their teacher education experiences.

While the use of digital technology in the classroom was widespread and educational researchers were interested in the impact of teacher education programs on teachers' digital literacy, teachers were also utilizing technology to share knowledge and inform their practice (Macià & García, 2016). In their study, Macià and García sought to answer how teachers were utilizing online communities and networks as a source of professional development. Their literature review of research published after 2009 sought to answer questions such as "What are the main characteristics of the studied learning structures?", "Which theoretical frameworks and research methodologies [had] been used to study online professional development communities/networks for teachers?", "How [was] participation fostered in teachers' communities and networks?", and "What repercussions did participation in online networks and communities have on teachers' professional development?" (Macià & García, 2016, p. 293). Their results found that the full impact of online communities on teacher professional development was unclear and that because the phenomenon of teachers participating in online networks in order to seek professional development was relatively new, more research was needed.

The impact of teacher beliefs on technology integration was also important to educational researchers in the 2010s. Kim et al. (2013) completed a four-year study to examine the relation of teachers' beliefs to their technology integration practices. The goal of this study was to improve the use of technology in poorly performing schools in the southwestern United States by providing new technologies, professional development workshops, and pedagogical assistance. The results of their study showed that teacher beliefs about effective ways of teaching and their technology use were directly correlated. From these examples, we see that the use of technology in classrooms was an important aspect of teaching and learning in the 2010s. Highly cited research articles showed that educational researchers around the world wanted to improve digital literacy among teachers and understand how teacher education and development programs could be used to help educators.

## Teacher Identity

In addition to analyzing structure, content, and focus of teacher education, educational researchers also worked to understand how teacher identity, beliefs, and burnout were affecting education. Six of the 20 articles analyzed for this decade dealt with this theme. The overarching target of the research in these areas seemed to be the idea that fostering teacher identity, allowing for teacher agency in the classroom, and studying the impact of teachers' beliefs could help to improve the experience of teachers and aid in avoiding burnout or emotional exhaustion among teachers. Akkerman

and Meijer (2011) began the decade with a review of literature analyzing the concept of teacher identity. They determined that teacher identity went beyond a set of "assets" (i.e., accumulated knowledge, skills, and pedagogical competencies). Teacher identity, instead, should be viewed through a dialogical lens in which the teacher as an agent helps to determine their own professional development needs and trajectories.

In 2010 and 2011, Skaalvik and Skaalvik focused attention on the idea that teacher job satisfaction and self-efficacy were predictors of burnout and subsequent teacher attrition. Their 2010 study showed that collective teacher efficacy was most strongly related to supervisory support (Skaalvik & Skaalvik, 2010), while their 2011 empirical analysis of the relationship among a variety of school context variables, teacher job satisfaction, emotional exhaustion, and feelings of belonging showed that a lack of belonging as well as emotional exhaustion had a direct impact on whether or not teachers were motivated to remain in or leave the profession (Skaalvik & Skaalvik, 2011).

The idea of teacher agency was also explored during this decade. It was recognized that teacher beliefs impacted a teacher's choices in the classroom and thereby had a direct impact on student learning. Worldwide, there was tension within educational institutions between those who would encourage teacher agency and those who sought to minimize it (Biesta et al., 2015). In a 2015 survey of teachers who were involved in a curriculum change project in Scotland in which teachers were positioned as agents of change, it was found that teacher beliefs regarding teacher responsibility and the purpose of education had a direct impact on teacher agency (Beista et al., 2015). Authors of that study recognized that a deficit of discussion regarding the purpose of education existed and that more robust conversation in this regard was necessary.

## Discussion

One clear takeaway from the articles in this decade is that they built upon work done in previous decades. The 2000s discussed a need for high-quality teacher education and the 2010s built upon that with many articles discussing effectiveness of teacher education. Further, the new focus on technology in the 2010s created an additional facet of high quality teaching and teacher education. By digging into what types of teacher education are effective, the articles in the 2010s added detail to what makes teacher education high quality.

## 2020 and Beyond: Technology, Online Learning, and Race

The 20 most cited articles from the year 2020 in teaching and teacher education represented many topics and themes. In this analysis, we will discuss the themes of technology in education, online learning (in the context of COVID-19), and race. We will also consider common types of research used as well as trends and possible future research.

### Research Methods

The 20 most cited articles from 2020 mostly fell into one of three types of research: empirical studies (10), literature reviews (7), and theoretical papers (2). The top three most cited papers fell into each of these categories with the most cited being an empirical study, second-most cited a theoretical paper, and the third-most cited a literature review.

### Themes

There was a wide spread of where these articles were published compared to previous decades. The 20 articles were published across nine different journals. Two or more articles were published across seven different journals with the plurality of articles (four) coming from the Journal of Teacher Education.

There were many different topics that were published in 2020. The three most popular topics were technology (three), online learning and COVID-19 (two), and race (two). The remaining articles dove deeply into one specific topic, subtopic, or idea, preventing their thematic classification.

## Technology

Of the three studies that discussed technology, each focused on a different aspect of technology. Casillas Martín et al. (2020) focused on early childhood education preservice teachers and studied their feelings about information and communication technologies (ICT). Overall, the preservice teachers had very positive views of ICT. They had moderate confidence in their abilities to use ICT, and they felt their knowledge about ICT (how to effectively use it in the classroom, what types of technology are out there, etc.) was minimal.

Walkoe and Elby (2020) also focused on preservice teachers, but they studied how preservice teachers used technology to enhance their teaching skills. They had preservice teachers use a video tagging program to notice and reflect on things happening in the classroom. The article found that preservice teachers could both notice the same moment but have different interpretations for what was happening at that moment.

Instead of focusing on preservice teachers, Maas and Hughes (2020) reviewed the current research about virtual, augmented, and mixed reality technologies in K–12 education. Of the 29 studies that were considered, most focused on augmented reality, with only three studying mixed reality and one studying virtual reality. Within those studies, many topical themes emerged, including collaboration and communication, critical thinking, attitude, engagement, learning, motivation, and performance or achievement.

## Online Learning

Online learning became an important theme in 2020. With the worldwide COVID-19 pandemic disrupting traditional schooling for most of the world at the end of the 2019–2020 school year, some of the articles in 2020 focused on the effects of completely transitioning to online learning. A few journals even ran entire special issues on this topic.

The most cited article from 2020 was by König et al., and it focused on early career teachers in Germany and how they were handling the shift to online learning due to the pandemic. The study focused on the first few months of the pandemic, and during those months, early career teachers in this study generally maintained regular contact with students and parents, introduced new content to their students, assigned tasks, and provided feedback. Skills in online teaching and online assessment were not used as much nor did teachers have as much confidence in being able to use those skills.

Carrillo and Flores (2020) did a literature review of different studies focusing on online learning. They came up with three themes that were present throughout their literature review. Their research reaffirmed the need for the presence of the three elements of the CoI Framework—teacher presence, social presence, and cognitive presence (Garrison, 2009)—in online learning in order for it to be successful. Carrillo and Flores (2020) also discussed the "blurred line" between the need for social and cognitive presence. However, teacher presence had strong connections to both the social and cognitive presence in online learning and teaching. Because of that finding, the authors stated there needs to be more research on the "social and collaborative components of learning" (p. 478) in online pedagogy. These findings provided insight into online learning in education research. The research in 2020 on remote learning showed how the field of education research responded and found solutions to challenges that arose in teaching and teacher education.

## Race

There were two articles that focused on race from 2020. The first was by Shah and Coles (2020). In this article the authors discussed the term racial noticing, which is bringing awareness to racism and acknowledging possible or potential racism around us. This study called for preservice teachers to be educated in anti-racism before they begin teaching in the classroom.

The other article by Baker-Bell (2020) discussed anti-racist Black language pedagogy. The author gave a history of Black language in the classroom, discussed the linguistic inequalities in English Language Arts (ELA) classrooms, and interrogated the notion of "academic language." The author also provided an ethnographic approach in understanding how an all-girls ELA class of ninth graders in Detroit who identify as Black or African American reflected on anti-black

linguistic racism. The theme of race in teaching and teacher education indicates a need for further research and continued improvement on how race impacts students and their learning.

## Discussion

The theme of technology carried over from the 2010s into 2020. Considering the opportunity for increased digital literacy in classrooms due to the COVID-19 pandemic, technology may be more relevant to teacher education than ever before. As the 2020 decade continues, we anticipate there will continue to be a large push for more online learning, technology, and digital literacy research. Additionally, we anticipate that there will be more research on how education was handled during the COVID-19 pandemic. Race has emerged as a prominent topic of discussion and research during this decade, and we expect it will continue to influence teaching and teacher education research throughout the rest of the 2020s.

## Synthesis of 50 Years

### Common Themes

Many themes emerge as we look back over the last 50 years of research in teaching and teacher education. We will be focusing on the five main themes of the decades: teacher identity and teacher beliefs, teaching methods, teacher education reform, English as a second language (ESL), and cultural awareness.

### Teacher Identity and Teacher Beliefs

Over the last 50 years, every decade has included some research in the 20 most cited articles about teacher identity or teacher beliefs. These articles focused on how the teachers viewed themselves in or out of the classroom, what beliefs teachers came into the profession with, how those beliefs changed as they taught, and who influenced teachers' identities or beliefs.

### Teaching Methods

The study of different teaching methods was also prevalent in each decade of the last 50 years. The methods themselves have changed from 1970 to 2020, but the idea that new methods and more effective methods exist has continued to progress over time.

### Teacher Education Reform

Another theme we found throughout all of the decades was the idea of teacher education reform. Each decade had articles that called for reforming teacher education to improve it for both teachers and future students. Again, like teaching methods, the actual calls for reform look different throughout the decades, but the idea of change and improvement is there across the last 50 years.

### English as a Second Language

ESL is the only subject-specific theme that emerged in our research, but it wasn't initially a prevalent theme. Only one article in the top cited research during the 1970s focused on ESL teaching. In contrast, in the 1980s, 11 of the top 20 cited articles focused on second language acquisition. This focus continued throughout the 1990s, and then this theme was not seen among the top cited research again until the year 2020. These trends show that helping learners acquire skills in ESL was important to educational researchers, even though the emphasis on ESL research varied across the decades.

### Cultural Awareness

Cultural awareness research started to pop up in the 1990s where researchers were focusing on various cultures and how those cultures impacted or could impact classroom learning. This theme of cultural awareness continued through the 2000s, 2010s, and most recently, in 2020.

# Important Issues, Topics and Trends

## Race and Culture

The awareness of race and culture in teaching and teacher education research evolved from 1970 to 2020. In the 1970s, little research focused specifically on race and culture. Instead, some articles targeted students for whom English was not their first language. They explored how culture impacted English as a second language (ESL) students or second language (L2) users. In the 1970s, they used terms like native and non-native speakers (Reid, 1987). Rampton (1990) examined the issues with those terms and suggested replacing them with more appropriate terms. As ESL research continued to progress, Silva (1993) proposed a need to develop theories and practices that appropriately addressed the multilingual and multicultural perspectives of L2 users. At the end of the 1990s, there was a movement to correct how others perceived the L2 users and how L2 users perceived themselves. Cook (1999) found that having a positive image of L2 users can help them recognize they are successful multicompetent speakers, not failed native speakers.

As the research progressed through the decades, there was a stronger emphasis on teaching and teacher education research directly related to race, culture, and socioeconomic status. Mol et al. (1992) used the phrase “funds of knowledge” to describe something more encompassing than the phrase “culture.” Funds of knowledge is the knowledge that pertains to the social, economic, and productive activities of people in a local region. Moving forward, practitioners, communities, and families can work together and combine resources to magnify the funds of knowledge that can bring educational change. In the 2000s, Gay (2002) discussed the importance of culturally responsive teachers and their impact on the academic success of ethnically diverse students. Almost two decades later, Shah and Cole (2020) called for more teacher education about race and racism. As a result, we see that culture, race, racism, and anti-racism have been more centrally discussed in classroom settings. After recent events in the United States, such as the killing of George Floyd and the expansion of the Black Lives Matter movement in 2020, we expect to see more studies about race, racism, and anti-racism moving forward.

## Author Diversity

There was as much variety in the authors as there was in the research in teaching and teacher education research. There were three main trends: (a) an increase in articles authored by multiple authors, (b) an increase in female authors, and (c) an increase in the number of international articles. In the 1970s and 1980s, less than half of the articles had multiple authors. Progressing through the decades, the number of multi-authored articles increased. In the 1990s, more than half of the articles had multiple authors. In the 2010s and 2020, more than 15 of the 20 top cited articles had multiple authors. Starting in the late 1980s and early 1990s, there was an increase in female authors. In the 1970s, there were only four female authors. In the 1980s and 1990s, there were more than 10 female authors. By the 2000s, more than half of the articles had at least one female author. This trend continued in the 2010s and 2020. The third major trend in authors was the increase in international authors through the decades. In 1970 there was one international research article. The number of international articles increased drastically through the decades. By 2010 there were at least six international articles, and in 2020 over half of the articles were international articles.

## Influence of Teacher Attrition

According to data from Carver-Thomas and Darling-Hammond (2017), teacher attrition increased dramatically from the early 1990s into the mid 2000s. We believe that this increase in teacher attrition contributed to much of the most cited research throughout the 2000s and 2010s. In particular, we saw much of the top cited research had trends in (a) improving the quality of teacher education and (b) teacher identity, which could both relate back to the issue of teacher attrition.

The trend of quality of teacher education was first apparent in the 2000s. Darling-Hammond (2006) addressed the issue as she warned of the dangers of watering-down teacher education. Grossman et al. (2009) and Loewenberg Ball and Forzani (2009) added their work on how to improve professional development to better prepare teachers for the complexity of the teaching profession. Avalos (2011) reviewed 111 publications from Teaching and Teacher Education from 2000–2010 and found effectiveness of professional development to be a major theme in the studies. Darling-

Hammond (2017) continued her focus later in the 2010s by comparing U.S. teacher education with teacher education programs in other countries.

The trend of teacher identity also appeared around the same time. Beijaard et al. (2004) seem to have sparked a string of influential work on professional identity by reviewing much of the work already done on teachers' professional identity and proposing ways to better guide research on the topic. Flores and Day (2006) published a qualitative study to better understand what shapes and reshapes new teachers' identities, and Tschannen-Moran and Hoy (2007) added their qualitative research that focused on the source of teachers' self-efficacy beliefs. This trend continued into the 2010s with work from Skaalvik and Skaalvik (2010) that examined relationships between teacher self-efficacy beliefs and teacher burnout, with Hong (2010) and Akkerman and Meijer (2011) also publishing influential research on teacher identity in the early 2010s.

## Evolution in ESL Teaching

ESL teaching is the only subject-specific theme that emerged from our analysis of teaching and teacher education research. A study of the top cited articles discussing teaching English as a second language (ESL) and related topics from 1970 to 2020 revealed a range of issues and trends. The approach to ESL and second language acquisition evolved through the decades.

Research on ESL teaching comprised 18% of the top cited articles over the past 50 years. This research was a primary focus during the 1980s and 1990s. During the 1980s, this theme comprised 11 of the top 20 cited articles. The trend continued into the 1990s to a lesser extent, with seven of the 20 articles. Only one article focused on ESL during the 1970s and none in the 2010s. While the topic was not mentioned during the 2000s, cultural awareness and diversity were prominent during this decade. The theme of ESL resurfaced during the year 2020 with three highly cited international articles.

Over the course of the five decades analyzed in this synthesis, the methods used in second language (L2) instruction evolved from an emphasis on the most efficient way to instruct children and young adults in English as a second language to a more learner-oriented approach which emphasized learner choice. During the 1980s, educational research focused on learning strategies and styles as well as practice-based methodologies such as group work, native speaker and non-native speaker (NS and NNS) interaction, and the effectiveness of direct instruction versus exposure acquisition. The focus on learning strategies and styles resulted from the view that knowing the process, rather than just the product of learning, was needed to move from "head-scratching" to designing programs that met the varying needs of students (Block, 1986). Early in the decade, researchers analyzed the effectiveness of direct instruction, whereby a student acquires a second language by interaction with a teacher in a structured setting, as opposed to exposure to the second language in use or a combination of the two (Long, 1983). Long's research analysis concluded that direct instruction benefited ESL students, and subsequent researchers worked through the decade to understand the best methods to include in the ESL classroom. Those methods included group work, interaction, and interlanguage talk. Long and Porter (1985) provided evidence that group work and interlanguage talk, or conversation between non-native speakers, were highly beneficial to second language acquisition. This research encouraged a move away from what Long referred to as "lock-step" teaching and a pedagogical emphasis to a more psycholinguistic approach in which NS/NNS interaction was valued in the ESL classroom.

Late in the 1980s, Pennycook (1989) asserted that the focus on methods in language teaching was erroneous, claiming that this perpetuated inequities in education. This change from English language teaching methods as the primary research focus to a more socially aware field of study continued primarily through the first half of the 1990s. In contrast to the 1980s, none of the top cited articles during the 1990s analyzed ESL from the lens of teaching methodology, content, or practice. Instead, researchers in the 1990s focused attention on a range of topics, which included the implications of gender differences in L2 acquisition (Green & Oxford, 1998), the shift away from the native speaker in ESL classrooms (Cook, 1999), the social identity of language learners (Peirce, 1995), and the social ramifications of ELT (Ricento & Hornberger, 1996). In 1998 Johnson and Freeman urged a reconceptualization of English language teacher education with the intent to place emphasis on the sociocultural context in which ELT professionals work.

Research during the 2010s was not primarily concerned with the theme of ESL, as it did not comprise any of the 20 top cited articles during that decade. However, this theme resurfaced during the year 2020 with three articles, each of which approached L2 instruction from a different perspective. These three articles dealt with language use in the classroom (Brevik & Rindal, 2020), teacher metacognition (Yuan & Zhang, 2020), and student voice (Lee & Butler, 2020). Two of these studies differed notably from the research during the 1980s and 1990s in that these studies were located outside of the United States and focused on students learning English as a second language in a school or university setting in which the students themselves were native speakers. This was in contrast to the earlier research, which was comprised of mainly immigrant students in the United States at either secondary, university, or community levels. The range of topics within the theme of ESL during the past 50 years revealed an evolving approach to ESL teaching and L2 students.

## Data Sources

We synthesized the research of teaching and teacher education from 1970 through 2020 and identified the trends and themes of that period. In doing so, we found that all the top cited articles came from thirteen journals. Our research provides insights into how many articles in each decade came from a particular journal and how they aligned with the themes of the decade. For example, we found that some journals dominated the decade. In the 1980s, 11 out of the 20 top cited articles were published in *TESOL Quarterly*. During the 2010s, 50% of the top cited articles were published in *Teaching and Teacher Education*. In addition, we found that from the 1970s to 2020, the variety of journals increased. For example, in the 1970s, all of the top cited articles came from four journals. In contrast, during the year 2020, the top cited articles were published in nine journals. In every decade, there were at least two articles published in the *Journal of Teacher Education*. Further research is needed to examine publishing trends, such as the number of published journals in each decade and other factors that could have favored one journal above others in search methods and citation frequency.

## Limitations

A limitation of our research is the brief amount of time articles from 2016 to 2020 have had to be cited. Because articles in this range have only had between two and five years to be cited, our research could be skewed toward articles published earlier in the 2010s. For instance, 13 of the top 14 most cited articles from the 2010s came from 2010–2013. Similarly, because 2020 was only one year ago, there has not been much time or opportunity for articles to be cited. As the 2020s continue, the 20 most cited articles may shift and change, and our current analysis may become out of date. The COVID-19 pandemic also may have had an impact on publishing, research, and studies that we may not see until later in this decade.

## Missing Links, Topics, and Trends

### Bullying

The prevention of bullying is a priority in many schools (Drake et al., 2003). However, in the top cited articles in the last 50 years there was only one article that addressed bullying. It is notable that bullying was not included in the top cited research for any of the other decades, considering that bullying often impacts student learning dramatically.

### Teacher Training in Educational Technology and Online Learning

During the 2010s and into 2020, there were a number of articles that discussed the need for preservice teachers to receive more training on using technology in the classroom. Björk and Edvard (2017) found that new teachers indicated their training in using technology in the classroom was not adequate. While there has been research on technology use in the classroom over the past few decades (see the “Educational Technology” chapter of this book), the topic of online learning was missing from the top cited articles in the 2010s. However, we predict that online learning will become more of a focus in top cited articles in the coming years.

### Cultural Awareness within ESL Teaching

The presence of the second language learner’s culture and its direct influence on the acquisition of a second language is notably absent in the 22 articles concerned with ESL cited in this review. A survey of the articles from the 1980s

reveals this void when it comes to analysis of the culture of ESL students. Seven of the 11 articles that studied ESL during the 1980s contained empirical studies, and the authors disclosed the nationalities of the subjects. However, no mention of the influence of the subjects' cultural background or its influence on learning was made during any of the studies. Subjects came from a variety of nations located in Asia, Europe, and South America, but the influence of these various cultural backgrounds was not evident in any of the studies produced during the 1980s. In 1989, Pennycook criticized the ELT profession for imposing Western culture on L2 students. This was echoed by Ricento and Hornberger in 1996 as they advocated for change in the field of language planning policy. Indeed, researchers in the 1990s adjusted their focus to include sociocultural context within ELT. However, the direct impact of a student's native culture on the acquisition of a second language was still missing from the top cited research. One article urged a recognition of the L2 speaker as "between two cultures" and advocated a move away from measuring L2 competence against a rubric that focused on native speaker traits (Cook, 1999, p. 200) but did not discuss the subject of the ELL's native culture. Freeman and Johnson in 1998 suggested redefining the approach to language teacher education by focusing on the sociocultural context of teachers' experiences. Even though these shifts were reflected in the research, a lack of specific research on the sociocultural experiences of ESL students was evident.

## Conclusion

Our analysis of the past 50 years of research in teaching and teacher education reveals sweeping changes. Early decades of research analyzed in this review showed a system of teaching and teacher education concerned with students' achievement as measured by standardized testing and what was considered to be academically sound for the time. This included specific teacher practices, classroom behavioral norms, and rigorous academics. Early research showed little to no attention given to the sociocultural influences on students or teachers. This began to change during the 1990s when a new focus on the impact of both students' and teachers' varied cultural contexts emerged. Throughout the 2000s, 2010s, and the year 2020, research on teaching focused primarily on sociocultural influences in the classroom, with student achievement and teacher practice taking a backseat. In addition, research during the 2000s and 2010s focused on improving the quality of teaching, defining a "good teacher," and comparing the U.S. educational system with international educational systems.

Throughout the 50 years of research that we analyzed, we also noted that broad changes took place in teacher education. During the 1970s, teacher education was focused primarily on teaching strategies and the variety of outside influences that impacted preservice teachers. However, during the 1980s, educational researchers were calling for the need to reform teacher education for the university setting to have a lasting impact on new teachers. Teacher education reform remained a theme from the 1980s through the 2010s. During the 2000s and 2010s, researchers worked to understand how teacher beliefs and efficacy impacted the experience of preservice and in-service teachers. Research during this time explored new ways of helping teachers acquire desired beliefs and attitudes. From 2000 to 2020, a new focus on innovation and technology was exhibited in the research. It is anticipated that this focus will continue throughout the 2020s as educational researchers analyze the effects of the swift implementation of online teaching and learning due to the COVID-19 pandemic.

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## Synthesis

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