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Undertaking complex but effective instructional supports for students: A systematic review of research on high-impact tutoring planning and implementation

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Abstract: This study synthesizes existing research on the implementation of tutoring programs which we define as one-to-one or small-group instruction in which a human tutor supports students grades K-12 in an academic subject area. Tutoring has emerged as an especially promising strategy for supporting students' academic success with strong causal evidence finding large, positive effects on students' math and reading test scores across grade levels. Prior studies have reviewed this causal evidence of effects, but none have summarized the evidence on implementation. We iteratively developed search and selection criteria to identify studies addressing key research questions and synthesized these 40 studies which employ a range of research methodologies to describe how tutoring is implemented and experienced. We find that existing research provides rich descriptions of tutoring implementation within specific programs of focus, with most studies describing after-school tutoring and small-scale programs run by university professors. While few elements of implementation are studied in depth across multiple studies, common patterns emerge. Tutoring program launch is often facilitated by strategic relationships between schools and external tutoring providers and strengthened by transparent assessments of program quality and effectiveness. Successful tutoring implementation often hinges on the support of key school leaders with the power to direct the use of school funding, space, and time. Tutoring setting and schedule, tutor recruitment and training, and curriculum identification influence whether students are able to access tutoring services and the quality of the instruction provided. Ultimately, the evidence points to strong tutoring being driven by positive student-tutor relationships through which tutors provide instruction strategically targeted for students' strengths and needs driving towards a long-term academic goal.

Introduction

Tutoring has emerged as a primary strategy for addressing interrupted learning due to Covid-19 and supporting students' academic success and social-emotional wellbeing. While students' access to tutoring has historically been limited by family income and geography (Kim et al, 2021), states and districts are now directing significant funds towards tutoring efforts in the hopes of supporting students most affected by Covid-19. (Jordan et al, 2022; National Student Support Accelerator, n.d.; U.S. Department of Education, 2021). Tutoring, in this context, is *one-to-one or small group instruction in which a human tutor supports students in an academic subject area*.

A remarkably strong body of well-designed causal experiments have estimated tutoring program effectiveness.[1] A recent meta-analysis identified 96 randomized controlled trials and found consistently large, positive impacts of tutoring on math and reading across grade levels, with a pooled effect size of 0.37 standard deviations (Nickow et al., 2020). Reviews of programs for struggling readers (Slavin et al., 2011) and academic interventions for students with low socioeconomic status (Dietrichson et al., 2017) have similarly found tutoring to have substantial positive effects on academic achievement.

Not all tutoring programs yield positive results, however. Studies of out-of-school time tutoring through No Child Left Behind's Supplemental Education Services program have not found statistically significant impacts on academic performance, in part due to low enrollment and participation rates among eligible students (Heinrich et al, 2014). Given the variability in effectiveness across studies, it is useful to understand why some programs are more effective than others.

[1] Additional meta-analyses focused on calculating effect sizes examined out-of-school time programs (Lauer et al., 2006), intelligent tutoring systems (Ma & Adesope, 2014; Van Lehn, 2011), and peer tutoring programs (Alegre Ansuátegui et al., 2017).

Existing syntheses of the causal evidence shed light on some of the differences across programs. Nickow et al. (2020) considered how estimated effects vary by tutoring program characteristics, reporting descriptive results which should not be interpreted as isolating particularly impactful program features. They found that tutoring conducted by teachers yielded larger impacts than tutoring by paraprofessionals, nonprofessionals, and parents; however, this conclusion was primarily driven by studies of just one program - Reading Recovery. During-school tutoring produced effect sizes nearly double those of after-school tutoring. And, effect sizes positively correlated with the number of tutoring sessions per week. Dietrichson et al. (2017) explored differences in effect sizes by intervention characteristics including program duration, delivery by professionals, and training provided, none of which were statistically significantly associated with study effect size.

Implementation, as well as program characteristics, can affect a program's impact. A number of literature syntheses on tutoring have addressed implementation; however, none of these studies have focused on the implementation of one-to-one or small group instruction in which a human tutor supports students in an academic subject area broadly for students grades K-12. Li and Wong (2021) reviewed trends in research on personalized learning from 2001 to 2018 and found that research was dominated by articles related to intelligent learning systems and experiments involving new technologies. Tutoring by a human tutor was not specifically mentioned. Researchers have also reviewed peer tutoring among English language learners and students with disabilities in which pairs of students take turns prompting each other (Bowman-Perrott et al., 2016; Morano & Riccomini, 2017). Multiple reviews have focused on tutoring programs in which students with disabilities serve as same- and cross-age peer tutors (Mathes & Fuchs, 2019; Okilwa & Shelby, 2010; Spencer, 2006; Watts et al, 2018). Haverback and Parault (2008) reviewed the literature on the role of literacy tutoring in pre-service teacher development and found that tutoring may provide an avenue for building self-efficacy and experiences supporting the needs of individual students. However, their review did not include research published in the last decade.

Overall, existing meta-analyses are primarily designed to estimate the causal effect of tutoring, although also yield some potential explanations for variation in program effectiveness. By expanding the range of research methodologies explored, this synthesis seeks to further our understanding of the mechanisms underlying the causal effects and effective implementation, as well as to generate hypotheses about the potential role of tutoring in education moving forward. As tutoring efforts expand nationally, it is useful to understand the policies, planning, and implementation practices that influence how tutoring is experienced by students and tutors. This study aims to increase our understanding of how tutoring programs are implemented, help identify holes in our understanding of effective implementation, and provide direction for further research.

We identify and synthesize a broad range of research in order to address the following questions:

1. How has research conceptualized the role of tutoring across contexts?
2. How are tutoring programs planned, implemented, and experienced?
3. How does tutoring influence students, tutors, teachers, families, and others involved in tutoring programs?

We find that while few elements of tutoring implementation are explored in depth across multiple studies, common patterns emerge across tutoring sites. We propose an initial framework for understanding tutoring implementation with a focus on strategic partnerships, integration with a school's broader goals, and a focus on recruiting, training, and supporting strong tutors, who in turn develop student-tutor relationships to foster student success.

Methods

For this synthesis, we review the research on the implementation of one-to-one or small group instruction in which a human tutor supports students in an academic subject area. We consider study findings within

the context of authors' existing theoretical frameworks and analyses rather than utilizing study data to explore novel research questions. In developing our methodology, we draw on key questions for systematic reviews outlined in Alexander (2020) and specific considerations for analyzing and synthesizing qualitative research described by Wilson and Anagnostopoulos (2021).

Inclusion Criteria

We iteratively developed selection criteria to focus identified studies on key research questions related to tutoring implementation and experience.

Language & Timeframe: Due to the linguistic limitations of our team, we only included studies published in English. We excluded studies published before 2000 to improve the relevance of the policy context and conditions studied for current tutoring implementation (Alexander, 2020). We chose this date in order to include studies of No Child Left Behind's Supplemental Education Services (SES) related to tutoring signed into law in the early 2000s, given the potential benefits of studying the large-scale implementation of tutoring. This date is similar to the Dietrichson (2017) meta-analysis which included interventions implemented in or after 2000. We used, for timing, the study publication year as not all articles we reviewed included implementation dates.

Methodology & Source Types: Wilson and Anagnostopoulos (2021) cautioned against establishing methodological criteria which limit the range of theoretical frameworks and methodologies in the selected articles. With this in mind, we took two approaches to establish studies' quality and credibility. First, we included only peer-reviewed journal articles and gray literature from established research organizations. Secondly, we considered how each study described the research aims, methods, and context of findings using the following guidelines:

1. The study must have clearly stated research questions or aims and employ original evidence (such

as interviews, survey data, document analysis, etc.).

2. The study must include a discussion of sampling, data collection, and analysis strategies that support the credibility of claims. Strategies may include using multiple sources, methods, and researchers (triangulation), feedback on results from participants (member checking), and detailed documentation of decisions made. We adapted this criterion from the description of credibility in qualitative research from Frambach et al. (2013).
3. The study must provide information on tutoring context and study design to help the reader assess the transferability of findings to different settings. We adapted this criterion from the description of transferability in qualitative research from Frambach et al. (2013). This information should include:
    a. A detailed description of tutoring context, program design, and participants.
    b. A clear description of the sampling methods and research informants.

Topic: We restricted the synthesis to articles describing one-to-one or small group instruction by a synchronous human tutor, although the term tutoring itself did not need to be present. Based on these criteria, we eliminated studies that used the term "tutorial" but only described full-class instruction, described instruction utilizing intelligent/adaptive computer learning systems but no human-to-human instruction, programs that trained "parent tutors" to support their own children academically, and those that analyzed class-wide peer tutoring and other classroom-based instructional strategies. We also eliminated articles that only spoke to program effectiveness and studies whose findings described tutoring implementation and experience in too general of terms to be generative in understanding tutoring more broadly, for example, statements such as "when asked, students seemed to like the program." Finally, we eliminated studies that described the implementation of instructional approaches specific to particular grade levels and subject areas, such as different ways tutors could teach fractions, because the goals of those studies were more focused on specific pedagogies than our current interest.

Setting: Similar to the approach taken by Nickow et al. (2020) and to focus on the most relevant contexts, we only included research conducted in the US for students grades K-12. The goal of the study is to inform policy and practice in the US, and, as such, we focus on the context of US education systems. We considered limiting the scope to tutoring run by or in close collaboration with public school districts and/or taking place during the school day. However, given that in-school tutoring is a relatively new focus of policy, we decided not to restrict the sample in these ways.

Search & Selection Process

We conducted searches on academic databases and the websites of key education research organizations. We used multiple social-science databases to identify a range of theoretical/methodological perspectives, particularly those that may not be highlighted in the causal literature on tutoring. We identified search conditions through an iterative process, developing initial search terms and conducting two pilot searches to refine our search procedure. As examples, we removed any methods-specific search terms and included exclusion terms related to higher education and the medical field. See Table 1 for a full list of databases and search conditions.

Table 1. Search Platforms and Conditions

Search Platform/ Databases	**Search Terms/Conditions**
EBSCOHost Academic Search Premier; ERIC; Teacher Reference Center; SocINDEX with Full Text; Gender Studies Database; Peace Research Abstracts; LGBTQ+ Life; Urban	In Abstract: (tutor* OR "one-on-one instruction" OR "1-on-1 instruction" OR "small group instruction" OR "supplemental instruction" OR "supplemental education services") AND (student OR school OR education) NOT tutorial NOT “classwide peer tutoring” NOT “class wide peer tutoring” NOT “class-wide peer tutoring” NOT Australia NOT China NOT Britain NOT nurse Limit your results: full text, 2000-present, Peer Reviewed Database-Specific Limiters (where available): - **Publication Type** - Periodical, Book, Peer Reviewed Journals, Academic Journals, Journal Article, Working Paper, Conference Paper, Gray Literature

Studies Abstracts; Anthropology Plus; APA PsycInfo; Business Source Premier; Humanities International Index; EconLit	- **Document Type** - Article, Book, Book Chapter, Case Study, Working Paper - **Language** - English - **Years** - 2000-2021 - **Age Groups** (option for APA PsycInfo only) - Childhood, School Age, Adolescence - **Geographic Region** (option for EconLit only) - Northern America - **Education Level** (option for ERIC only) - Elementary Education, Elementary Secondary Education, Grade 1-12, High School Equivalency Programs, High Schools, Intermediate Grades, Junior High Schools, Kindergarten, Middle Schools, Primary Education, Secondary Education Restrict Publications: Not medical teacher; medical education; teaching in higher education; assessment & evaluation in higher education; british journal of educational technology; journal of geography in higher education; education for primary care; european journal of teacher education; international journal of art & design education
Proquest Central Collections: PAIS Index; Policy File Index	AB(tutor*) OR AB("one-on-one instruction") OR AB("1-on-1 instruction") OR AB("small group instruction") OR AB("supplemental instruction") OR AB("supplemental education services") 2000-Present; English Publication: Not Higher Education
WEB of Science: SSCI	(((AB=(tutor* OR "one-on-one instruction" OR "1-on-1 instruction" OR "small group instruction" OR "supplemental instruction" OR "supplemental education services")) AND AB=(student OR school OR education)) NOT AB=(tutorial)) NOT AB=(medical) 2000-Present; English Web of Science Categories - Limit to Education Educational Research; Psychology Educational; Education Special; Urban Studies
JSTOR	ab:(tutor* OR "one-on-one instruction" OR "1-on-1 instruction" OR "small group instruction" OR "supplemental instruction" OR "supplemental education ") AND ab:(student OR education) NOT ab:(tutorial) Subject: Education; 2000 - Present

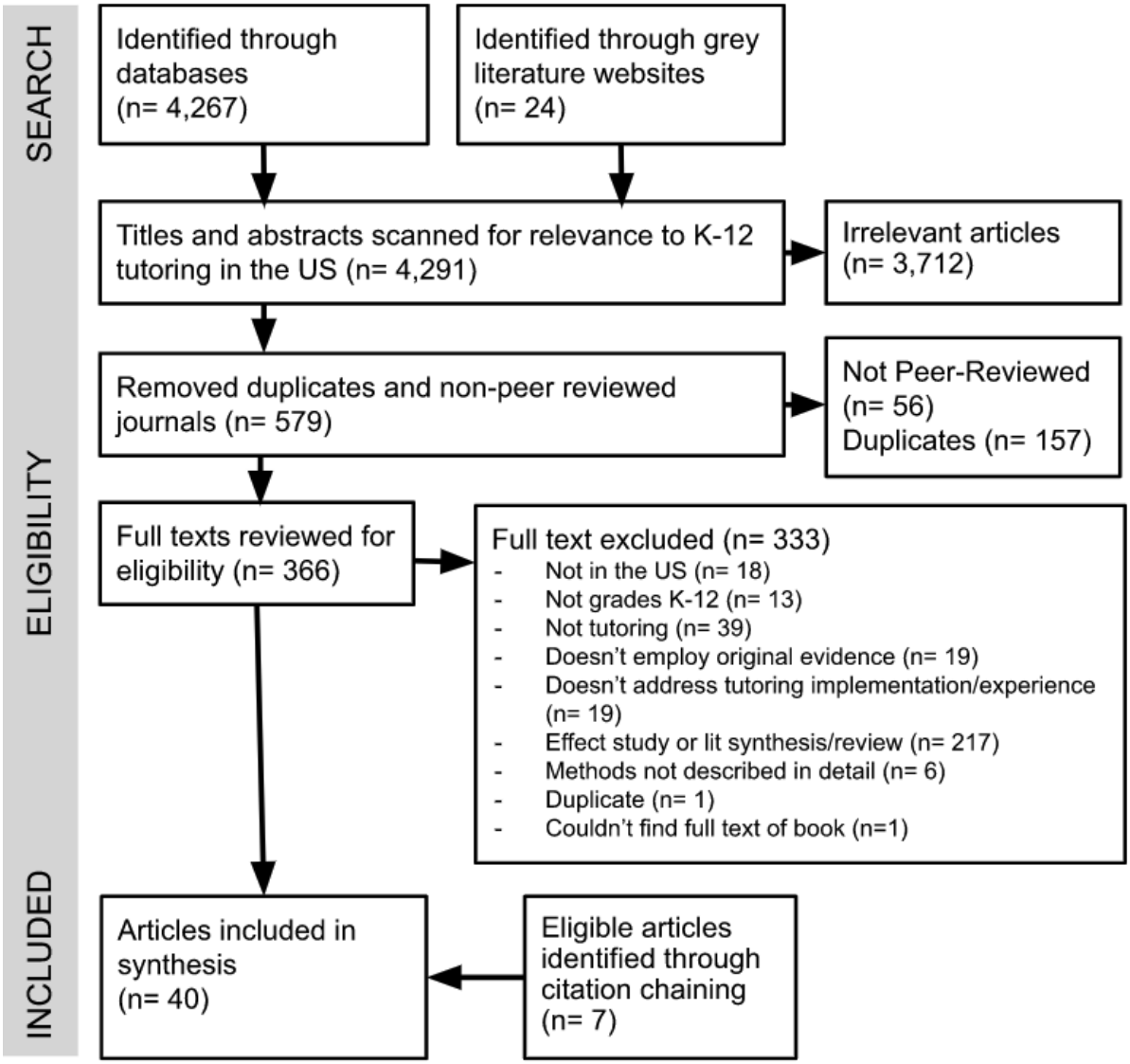
In addition, we searched the websites of education research firms and think tanks, federal government research databases, and professional organizations known for producing high-quality research reports relevant to education policy. We conducted these searches to identify more recent research than available in academic publications and tutoring program evaluations for which the goal was not journal submission.

Where search capability was available, we searched the full website using the keyword "tutor." Where no search option was available, we sought to identify the area of the website housing research reports on education and scanned publications manually. Websites searched included: Abt, American Institutes for Research, Black Education Research Collective, Brookings, Chicago Consortium, Consortium for Policy Research in Education, The Education Trust, EdWorkingPapers, Evidence for Action, Fordham Institute, FutureEd, Georgetown Center on Education and the Workforce, The Abdul Latif Jameel Poverty Action Lab, Learning Policy Institute, Mathematica, MDRC, RAND, SRI International, Urban Institute, and WestEd.

Once we identified the set of articles for inclusion based on database and website searchers, we conducted citation chaining by manually scanning reference sections of all included articles for relevant sources. We also used the Google Scholar "cited by" function to identify sources that cited articles included in the synthesis. We then conducted a search within "cited by" articles using the keyword "tutor."

After conducting searches, we scanned all article titles and abstracts for broad topical relevance. At this stage, we excluded 3,712 articles that were either not in English, conducted outside the United States, not related to students grades K-12, and/or provided no indication of relevance to tutoring or one-on-one/small group instruction (see Figure 1). After deduplication and checking for peer-review status, we downloaded the full texts of 366 articles for further consideration. At this stage, the primary researcher reviewed the full texts of all articles and assessed their relevance based on the content and methodology criteria described above, recording the reason for exclusion if applicable. We randomly selected 30 articles for double coding between two researchers; researchers reached 90% agreement across all articles to be included, excluded, or nominated for team discussion. Throughout the article review process, the primary researcher identified articles for weekly team discussions. We made all decisions on individual articles as well as updates to the selection procedures through consensus.

Figure 1. Article Selection Process



Coding & Analysis

One challenge of qualitative synthesis is the necessity of reducing study findings in order to engage in summary across articles, while still retaining the central role of context within each study (Wilson & Anagnostopoulos, 2021). We took an iterative approach to reduction, first attempting to understand each

study independently before exploring how meaning might emerge across studies due to common research approaches and/or shared educational contexts, and where tensions emerge in our understanding of tutoring due to divergent research findings. Parkhouse et al. (2009), as cited in Wilson & Anagnostopoulos (2021), encourages iterative processes for reduction.

Once we identified the articles (40) to be included in the synthesis, we coded the methodology, study and program context, and findings. To better understand the articles' methods we recorded research questions, outcomes of interest and measures, sampling description, data collection, analysis, and limitations identified by the authors. We also conducted extensive coding of study contexts including location, timeframe, selection and eligibility requirements for the student/tutor sample, and student/tutor sample characteristics. We then documented tutoring program characteristics including number of students in the program, selection and eligibility for the program, grade level, tutor selection, tutor training, tutor compensation, other program participants, program time and location, school type (public, private, charter, etc.), subject area of focus, description of instruction, student-to-tutor ratio, and dosage. Although not all studies provided extensive descriptions of the tutoring programs researched, we intentionally focused on program setting in the coding process due to the centrality of context in many qualitative methodologies and to better understanding the transferability of research findings (Wilson & Anagnostopoulos, 2021). Lastly, we identified and sorted study results into findings related to the tutoring experience itself, including student-tutor relationship and quality of instruction, findings related to enabling conditions for tutoring implementation, and findings related to student and tutor outcomes.

We were flexible and identified specific themes inductively as they emerged across multiple articles and tutoring contexts, beginning with an initial set of deductive codes for features of tutoring and its implementation. We considered the full texts of all articles, identifying any and all sections which pertained to our research questions, including both authors' main and peripheral findings. Given identified articles explored a wide range of research questions, we decided that considering the findings

only identified as key by the authors would limit our ability to identify themes across studies. Throughout, we wrote short summaries and identified quotes relevant to each topic area, attempting to preserve the author's own interpretations of their data. Similarly, throughout this synthesis we retained authors' original terminology when discussing students' social identities. We recognize that the categories used to describe race, gender, and educational identities constructed in the data collection and analysis processes, do not fully represent the lived experiences of students studied and may obscure meaningful within-group differences (Baker et al, 2022).

Researcher Positionality

Throughout the research process our personal backgrounds and professional positions informed how we made decisions regarding the direction of inquiry, scope of inclusion, and presentation of synthesized articles (Malterud, 2001 as cited in Wilson & Anagnostopoulos, 2021). At the forefront of our work is our interest in conducting research that supports education leaders in expanding access to tutoring opportunities. We each work directly with school districts across the United States on a regular basis and those ongoing conversations about tutoring implementation have informed our synthesis approach. As a research team, we also come to this work with extensive training and experience in quantitative, causal methods and our professional networks predominantly consist of scholars focused on quantitative research. This synthesis is in part an attempt to broaden the range of methodologies and perspectives present in our own conversations around tutoring implementation.

Results

Below we present findings for each of our three research questions, beginning with a description of the theoretical frameworks and tutoring contexts considered in the articles.

Research Question 1: *How has research conceptualized the role of tutoring across contexts?*

Study Characteristics

The studies we identified explore tutoring implementation within specific program contexts, many of which were after school and focused on math and reading instruction. In particular, 80% of studies were one of three types: those that considered the implementation and take-up of out-of-school tutoring under No Child Left Behind's Supplemental Education Services (NCLB SES) program, those that compared tutoring implementation to one of four established program models (Reading Partners, Reading Recovery, America Reads, and AmeriCorps), or those that described a university professor-run tutoring initiative. The accompanying online materials include a full description of included studies. We describe each of the three common contexts in greater detail below as they are key to understanding the transferability of research findings. We also consider whether studies employ theoretical frameworks and approaches which could ground future work.

Sixteen studies analyzed NCLB SES implementation and take-up. The No Child Left Behind Act included a "Supplemental Educational Services" (SES) provision which required schools in their second year of school improvement to make additional academic opportunities available through instruction available outside of the school day. Parents had the option of enrolling their student in reading and/or math tutoring from a state-approved provider paid for by district NCLB dollars. Studies analyzing SES included data from multiple schools, districts, and tutoring providers and drew on administrative student data, interviews with district and provider administrators, document analyses, and/or session observations. Standardized interview and observation protocols were used to bolster the credibility and reliability of findings. Studies also employed quantitative strategies including value-added models, propensity-score matching, and school fixed-effects to attempt to isolate the impact of tutoring on student outcomes. These studies were designed to explore the impact of SES within existing program models and thus did not

conduct randomized experiments to more firmly establish causality. Limitations included a reliance on students' standardized test scores as the primary – and often only – measure of student outcomes. Of these 16 studies, seven were authored by Carolyn Heinrich, Patricia Burch, and Annalee Good. This group of researchers among others led the "Supplemental Educational Services: Integrated Qualitative and Quantitative Study of Implementation and Impact" in six urban school districts (Austin, TX; Chicago, IL; Dallas, TX; Los Angeles, CA; Milwaukee, WI; Minneapolis, MN) – a study which accounts for a significant portion of the studies identified regarding SES as well as tutoring overall.

Another common type of study compared tutoring implementation to an established program model. The four studies in this category focused on tutoring initiatives that took place during the school day in multiple districts across the country: Reading Partners, Reading Recovery, America Readings, and AmeriCorps tutoring programs. Researchers drew on administrative student data, session observations, and/or interviews with school personnel across program sites and compared implementation to core program features. They employed clearly defined indicators of implementation fidelity, such as whether tutors were conducting all required activities in a prescribed curriculum, and accompanying rubrics to strengthen study findings. While fidelity is defined within a particular program context, focal features such as tutor training and support have broader implications for tutoring implementation. The multi-site implementation data which they brought to bear allowed them to propose hypotheses about variation in school-level conditions. Three of the four studies focused on tutoring in reading, often at the elementary level and therefore do not directly speak to program implementation in other grades or subjects.

Finally, 12 studies described university professor-run tutoring programs. These studies focused on tutoring at one or two school sites in which the researcher in their position at a local university played a central role in the design and implementation of the tutoring program. In three studies, the researchers explored how students responded in different academic settings (e.g., one-to-one versus small group). These studies employed detailed analyses of tutoring session dialogue, classroom observations, and/or

student surveys. Their claims are strengthened by clear descriptions of their roles in administering the tutoring as well as their choices in constructing the tutoring environment to be conducive to exploring their research questions. The other nine studies drew on researchers' own experiences and tutors' written reflections to describe the role of tutoring in fostering student-tutor relationships and supporting pre-service teacher learning. In these cases, the researchers were education professors and the tutors were often students in their classes. The articles with the most credible claims included clear descriptions of the theoretical framework and data sources, as well as analyses involving multiple coders and member checking. However, these practices were not ubiquitous. Additionally, few articles seriously considered the implications of professors conducting research involving their own students and tutoring initiatives, particularly when many drew on graded coursework as data for their studies.

Eight of the studies that we reviewed were outside of the three categories. Two studies considered the role of tutoring programs as part of pathways for diversifying the teacher workforce and utilized surveys of tutors and pre-service teachers. An additional study considered each of the following: determinants of students' help-seeking behaviors, community interest in afterschool programming, monetary stipends as a facilitator of tutor recruitment and retention, tutoring implementation in a school-turnaround plan, the role of public housing authorities in expanding tutoring access, and rhetoric employed in how-to manuals for starting a tutoring business.

The studies varied in the grade level and subject matter of tutoring. Forty-five percent focused on a mix of elementary, middle, and high school students receiving tutoring in math and reading. Most of these studies explore the correlation between student attendance in NCLB SES programs and academic outcomes and do not provide findings on tutoring implementation for specific grade levels or subject areas. Nearly one third of studies focused on elementary literacy. Few studies specifically considered elementary math, or middle and high school tutoring programs in any subject area. Twenty-two studies described tutoring outside of school hours, predominantly after school, with only nine describing tutoring

initiatives during the school day. Thus, a number of additional tutoring contexts are not thoroughly explored in the existing literature. See Table 2 for a summary of study descriptives.

Table 2. Description of Study and Tutoring Program Contexts

		Number of Studies	Percent of Studies
Year of Publication	2000 - 2009	14	35%
	2010 - 2019	23	57.5%
	2020 - March 2022	3	7.5%
Program Type	NCLB SES	16	40%
	Other National/Regional Program (ex. America Reads; Reading Partners)	6	15%
	Researcher-Led Program	12	30%
	Other Local Program	3	7.5%
	Study did not focus on a specific tutoring program (ex. Needs assessments on community interest in tutoring)	3	7.5%
Grade Levels & Subject Areas	Mix of Elementary, Middle, and High School; Mix of Reading & Math (Mostly NCLB SES)	18	45%
	Elementary Literacy	11	27.5%
	Elementary Math	0	0%
	Middle Grades Literacy	1	2.5%
	Middle Grades Math	1	2.5%
	High School Literacy	0	0%
	High School Math	1	2.5%
	Other - High School Languages; Homework Help	2	5%
	Study did not focus on a particular tutoring programs or information was not provided	6	15%
Program Timing	During School	9	22.5%

	Out-of-School Time (Predominantly After School)	22	55%
	Mix	4	10%
	Study did not focus on a specific tutoring program or information on program timing is not provided	5	12.5%

Conceptualizations of Tutoring

Our analysis identified five potentially overlapping conceptualizations of tutoring which highlight the wide range of purposes that tutoring can serve for students, tutors, and schools. Some conceptualizations focus on the goals of tutoring; others, on the means. They included:

1. Tutoring as intervention - Tutoring is administered by school staff, external providers, or as part of a school turnaround strategy to provide targeted student support. Tutoring is intended to help students develop academic skills and foster positive orientations towards learning.
2. Tutoring as facilitating innovative instruction - Tutoring is viewed as a novel instructional space that may allow for meaningful shifts in instructional strategies and experiences. Tutoring is seen as a potential site for authentic caring, highly interactive learning, and malleable teacher-learner relationships which reallocate power and instructional roles.
3. Tutoring as partnership - Tutoring in school settings is considered a beneficial experience for university students, retirees, and other groups not typically involved in K-12 education. Tutoring programs serve as a bridge between K-12 schools and local universities. Tutoring is designed as a scaffolded learning experience for pre-service teachers preparing for classroom instruction.
4. Tutoring as a marketplace - Individual tutors and tutoring companies compete for (primarily) parent demand. Public policy and accountability play a role in regulating the quality of tutoring provided and increasing the range of families with access to the tutoring market.

5. Tutoring as a responsive family and community initiative - Tutoring serves as an optional after-school support for students and families which may be responsive to families' assets and needs through community partnerships.

Studies in the synthesis tended to take one of these orientations and not consider other potential roles for tutoring. The conceptualizations employed also do not directly address the role of tutoring within school settings such as how it integrates with other systems of instruction and support for students. Some studies, however, did utilize theoretical frameworks in their analyses. The frameworks researchers employed differed by the type of tutoring program described; for example, one used market-based theories to consider SES tutoring as a policy explicitly motivated by market rationales.

Specifically, 24 studies explicitly situated their research questions within a theoretical framework and drew on existing research to motivate their methodological approach. While no one theoretical approach was utilized by more than two studies, some commonalities emerged in theoretical focus as described in Table 3. In particular, researchers utilized a range of frameworks to explore the ways in which tutoring program design and implementation combatted and/or perpetuated systematic educational inequities. To this end, multiple studies explored the demographic characteristics of students receiving tutoring, the roles of school, district, and tutoring provider staff as on-the-ground policymakers influencing program access and quality, and the potential for tutors to gain beliefs and skills to further support equitable classroom practices.

Table 3. Theoretical Frameworks Employed by Studies in this Synthesis

	Description	**Theoretical Frameworks & Related Studies**
Theories of Markets and Policy Implement-	Studies explored the roles of tutoring providers, district, state, and federal	● Privatization of government services (Burch et al, 2007) ● Dynamics of research-based decision making and research-practice partnerships (Heinrich & Good, 2018)

ation (7 studies)	policy actors in tutoring implementation and student experience.	● Supply-side considerations for private tutoring (Holloway & Pimlott, 2020) ● Actor-network theory (Koyama, 2011) ● Marketing; theories of consumer action and market regulation (Stewart & Good, 2016) ● Stipends as institutional facilitator (McBride et al, 2009) ● Instructional Core (Good et al, 2014)
Models of Student Behavior (6 studies)	Studies considered how students respond socially and academically in specific tutoring situations.	● Dual-risk theories of student behavior and academic engagement (Gest & Gest, 2005) ● Situational tendencies among students with learning disabilities (Marita et al, 2018) ● Technology anxiety (Okwumabua et al, 2011) ● Cognitive and noncognitive skills (Steinberg, 2011) ● Students as positive agents for their own learning (Walker, 2007) ● Need-contingent help-seeking (Zusho & Barnett, 2011)
Models of pre-service teacher development (8 studies)	Studies described the role of tutoring programs in paths to teaching.	● Culturally Responsive Pedagogy (Bennett, 2013) ● Ethic of caring (Worthy & Patterson, 2001; Lysaker et al, 2004) ● Service-learning and field experiences (Jones et al, 2004; Hoffman et al, 2018) ● "Nuestro Camino" (Ocasio, 2014 as cited in Jimenez-Silva et al, 2021) - intersectional theory of Latino teacher pathways ● Personal Narrative & Role of critical reflection (Polansky et al, 2010)

Research Question 2: *How are tutoring programs planned, implemented, and experienced?*

We identified 33 studies that describe tutoring planning, implementation, and/or experiences. Within these studies, we identified three common focuses of research inquiry: tutoring markets; support and infrastructure for tutoring implementation; and student-facing tutoring design and experience. Each of these areas further included themes which we describe in the following sections and summarize in Table 4. Additionally, the potential role of tutoring in addressing systematic education inequities emerged as a throughline discussed by researchers in association with each of these other themes and is similarly embedded throughout the following sections.

Table 4. Summary of Common Themes

Focus of Inquiry	Tutoring markets (11 studies)	Support and infrastructure for tutoring implementation (9 studies)	Student-Facing Tutoring Design and Experience (28 studies)
Themes and Counts	1. Availability of quality tutoring providers (5 studies) 2. Knowledge of tutoring provider effectiveness (4 studies) 3. Student and family interest in tutoring (2 studies)	1. Administrative capacity (5 studies) 2. School-level Buy-In (4 studies) 3. Availability and consistency of quality tutors (5 studies)	1. Student selection & take-up (15 studies) 2. Program schedule and setting (7 studies) 3. Curricular and instructional quality (10 studies) 4. Student-tutor relationships (6 studies)

Tutoring markets

Research on tutoring markets include studies on the availability of quality tutoring providers, knowledge of tutoring program effectiveness, and student and family interest in tutoring programs. Eleven studies described factors related to the supply of and demand for tutoring services. Many of these studies were conducted in response to the NCLB SES policies which explicitly articulated a market-based system for tutoring in which families would choose from a range of providers. These studies described trends in SES implementation and highlighted the limitations of NCLB policies to increase access to quality tutoring. Two studies took a different approach and instead asked students and families to describe the types of tutoring programs of interest to them, in one case using this information to inform local decision making around program provision (Sanderson and Richards (2010)).

Availability of Quality Tutoring Providers - Existing research points to difficulty accessing high-quality tutoring providers. Five studies examined the availability of quality tutoring providers. Four focused on NCLB SES and one analyzed tutoring business advice manuals. In particular, the research provides some evidence that tutoring providers have been uninterested in or ill-equipped to support high school students, English language learners, students with Individualized Education Plans, and those from less affluent

families. For example, Gill et al. (2008) found that few districts offered SES to eligible high school students partially due to the limited number of providers offering tutoring to this age group. Similarly, Heinrich et al. (2010) found that while most providers advertised that they could serve English Language Learners and students with Individualized Education Plans, few offered training for tutors on working with these student populations. Some providers also focused specifically on students from higher-income families, likely due to the perception of greater potential revenue (Holloway & Pimlott, 2020).

Proponents of NCLB SES argued that low entry requirements to provide tutoring services and parental choice as policy conditions, in theory, should incentivize a wide range of providers to join the market. This incentive, in turn, would lead to increased access to quality tutoring for students in eligible Title 1 schools. However, researchers found that only a small number of national firms came to dominate the SES market. Through an analysis of publicly-available financial data, Burch et al. (2007) found that from 2001 to 2005 growth in the availability of SES funds significantly outpaced average growth in the tutoring industry, suggesting that revenues were particularly concentrated in a few large firms. Based on operational data and district interviews, researchers determined that the large, national firms leveraged their existing curriculum and assessment products and conducted strategic acquisitions to build up tutoring portfolios quickly. In contrast, some small local firms were unaware of tutoring start-up costs such as rent and insurance and rapidly left the market when they were unable to cover these expenses.

Researchers also observed this pattern of consolidation in one of the largest school districts in the United States. During the 2004-2005 school year, 79 tutoring providers served at least one student, but just eight providers served 86% of all enrolled students. Within these top providers, the four nationally-operated firms increased their total percentage of students served while the large local providers decreased from 57% to 42% over the next year. Researchers did not find significant improvements in program quality or access as a few large, national providers came to dominate the SES market. In the district profiled by Burch et al. (2007), only one of the top eight providers employed staff members who spoke Spanish and

none of the four national providers reported providing special education services. The percentage of enrolled students making academic progress was also low among national firms at just 36% or less. Vernez et al. (2009) found that between 2004 and 2007 the average size of SES providers nationally increased from 36 staff to 79 staff while the percentage of certified teachers serving as tutors decreased.

Knowledge of tutoring provider effectiveness - In addition to highlighting concerns with the quality of tutoring providers in the market, four studies highlighted challenges for districts and parents in accessing accurate and actionable data on SES provider effectiveness to inform decisions about student enrollment. Burch et al. (2016) found that most information available was provider-generated, included only vague descriptions of instructional practices, and was often characterized by discrepancies across communications from the same provider. Additionally, they found that parents in focus groups prioritized student-tutor ratio, strong tutor qualifications, and quality curricula as important features of an SES provider. However, Heinrich (2010) notes that while information on these attributes was usually available, it was not accompanied by guidelines for assessing a program's strength, for example, what constituted a small group size or strong curriculum. Stewart & Good (2016) found that district and school leaders worked to filter and align the communication of provider-generated information by creating common program description templates and/or limiting provider access to families. However, it was not clear that these efforts meaningfully increased the quality of information available. Heinrich & Good (2018) described their research partnership with a district which led to changes in local SES policies. As a result the district: hired on-site coordinators to conduct ongoing observations of tutoring sessions; placed restrictions on program design including group sizes, dosage, and tutor experience; and matched providers to specific schools with the hope of limiting provider focus on recruitment efforts and refocusing on instructional quality. Burch et al. (2016) noted that it can be especially difficult to monitor the quality of digital tutoring instruction which takes place outside of classroom settings. Overall, SES research challenged the idea that incentivizing tutoring based on private providers and parental choice significantly increases tutoring quality and access.

Student and Family Interest in Tutoring - Looking beyond the NCLB SES context, two studies considered student and family interest in tutoring through structured interest surveys. Cornelli Sanderson and Richards (2010) partnered with local community organizations in a mid-western city, which they characterize as a "low-income urban community" (p.430), to gather student and family perspectives on a potential expansion of local after-school initiatives. They found relatively high levels of interest in after-school programs with 82.4% of 4th, 6th, and 8th-grade students, and 93% of parents reported that they or their kids would like to attend an after-school program at least 3 days/week. When asked to indicate activities of interest, 57.1% of parents listed tutoring. However, students did not list tutoring as one of the top five activities of interest, suggesting differences in student and family goals for after-school time. Finally, Okwumabua et al. (2011) explored attitudes towards online math tutoring among Black middle and high school students. Researchers found low levels of interest overall, with 78% of students reporting that they did not believe online tutoring could help them improve their math skills. Overall, we found few studies which considered student and family interest in tutoring and these generally indicated greater interest among parents than among students.

Support & infrastructure for tutoring implementation:

Nine studies described the essential roles that people and relationships play in implementing successful tutoring programs. Studies also described financial and organizational resources which can help grow and sustain strong personal investment in tutoring programs by program leadership and tutors. These themes emerged across studies on a range of program models including NCLB SES, university professor-run programs, and other national models such as America Reads, Reading Partners, and Reading Recovery.

Administrative capacity - Five studies identified paid organizational staff as instrumental in the launch, ongoing implementation, and sustainability of tutoring programs, although their role was often

undervalued in program funding. In particular, tutor recruitment and retention, curriculum and technology logistics, and student enrollment required significant staff time. Two studies reported that program coordinators were required to devote a considerable amount of time to building relationships with teachers, college students, and community volunteers to support tutor recruitment (May et al., 2016; Worthy & Prater, 2003). After having recruited tutors, Hallgren et al. (2017) found that a tutoring program in Atlanta Public schools was delayed due to limited administrative capacity to facilitate the logistics of tutor onboarding including background checks, access to school technology, and curricular materials, tasks which also required coordination between the district, external providers, and school staff. Similarly, Koyama (2011) found that some school principals reported devoting significant resources to coordinating student enrollment in NCLB SES programs. However, schools were unable to use their NCLB funds to cover these administrative costs. Lack of investment in essential administrative staff was also a theme in Worthy & Prater's research on an America Reads program in 2003, which was run by university professors who also served as unpaid coordinators. The coordinators reported feeling undervalued and the program was discontinued after its first year. In contrast, Jacob et al. (2015) found that despite frequent volunteer tutor turnover and absences, most Reading Partners sites were able to provide consistent tutoring to students due to investment in paid regional and site coordinators who stepped in to serve as tutors themselves as needed. Overall, investment in and support for organizational staff was critical across programs studied.

School-level buy-in - In addition to identifying the importance of administrative staff, four studies found that school principals played an essential role in implementing during- and after-school tutoring programs. May et al. (2016) found that principals who were actively involved in the Reading Rescue were more likely to recommend strong teachers to serve as tutors, ensure those tutors had adequate planning time, and defend the importance of tutoring in students' schedules. Hallgren et al. (2017) also found that the Atlanta Public Schools' tutoring program featured regular communication between tutors, site coordinators, teachers, and principals which helped to address curricular and schedule changes that may

otherwise threaten the consistency of tutoring sessions. Similarly, Good et al. (2014) found that when principals had a good relationship with NCLB SES providers they were more likely to work together to align their curriculum and student goals.

While no study specifically explored the conditions affecting principal engagement and buy-in, both May et al. (2016) and Koyama (2011) described how some principals sought to minimize enrollment in tutoring programs, viewing them as a drain on school resources. In these cases, May et al. (2016) argued that principals tended to be less knowledgeable about program goals and did not see Reading Rescue as a key element of their broader vision for the school. Good et al. (2014) described a school district's effort to allow principals to identify preferred SES providers for their school, hoping to increase their sense of investment and ownership in the program. However, Hallgren et al. (2017) found that even when principals were invested in the Atlanta program, tensions arose for tutors who were instructed to implement a pull-out model by the tutoring provider while working with principals who preferred them to provide additional classroom support.

Availability and consistency of quality tutors - Across six studies, researchers identified tutor recruitment, regular attendance, and retention as challenges, especially in regard to volunteer and college-student tutors. Jacob et al. (2015) found that the success of volunteer tutor recruitment for Reading Partners sites varied significantly by location, including access to public transportation and perceptions of safety in the area. Across sites, tutors were often absent from scheduled sessions, although the program was able to maintain consistency by having paid program staff step in to conduct tutoring sessions themselves. Worthy & Prater (2003) also described an America Reads program that struggled to recruit its target cohort of 300 volunteer tutors because many were already working with other local organizations. Of the 80 tutors they ultimately managed to recruit, just over 30 were still active six months later. Recruiting college students also posed a challenge due to the greater demands of tutoring than other comparably-paid work-study positions. One site attempted to bolster recruitment efforts by highlighting the initiative's

high expectations and focus on supporting students in recruitment materials, ultimately yielding a larger corps of committed tutors. McBride et al. (2009) found that Experience Corps tutors receiving a stipend were more likely to be non-white, serve twice as many hours per week (on average 14.5 versus 7.4 hours), and were more likely to stay all year (80% vs. 54%) compared to unpaid volunteers. Sixty-three percent of those who received a stipend reported it would have been hard to participate without it, suggesting that compensation may be a viable recruitment strategy.

Some research also suggested that it may be possible to recruit certified teachers and high-school peers as tutors, although fewer studies have explored recruitment and retention strategies for these groups. Heinrich & Good (2018) found that after Milwaukee enacted a policy requiring SES providers to hire certified teachers wherever possible, they observed 8/10 tutors to be certified teachers or specialists. Walker (2017) proposed high-school peer tutoring as a strategy for spurring mathematics achievement in schools where most students score below grade level, finding that students already drew on informal peer networks for support.

Student-Facing Tutoring Design and Experience:

Twenty-eight studies described elements of implementation that directly influenced students' personal access to and experience with tutoring programs. In particular, studies explored which students participated in tutoring, the quantity and quality of instruction they received, and the nature of student-tutor relationships.

Student selection & take-up - Fifteen studies provided some information on the processes by which students are selected for tutoring and patterns of student take-up. The majority of studies described NCLB SES programs, which required schools in their second year of school improvement to offer additional instructional opportunities available outside of the school day. However, among eligible students,

participation depended upon parents selecting and enrolling their children with a state-approved tutoring provider as well as school, district, state, and federal decisions regarding Title 1 funding availability and allocation (Heinrich et al, 2010; Koyama, 2011). Researchers found that SES programs had low take-up across the board with only 17% of eligible students enrolled nationally from 2002 to 2006 (Vernez et al., 2009; Gill et al., 2008). Further, they found that enrollment differed by student demographics. Specifically, White, Hispanic, and Asian American students were less likely to enroll in tutoring than Black students, but on average attended more tutoring hours if they did enroll (Good et al., 2014; Heinrich et al., 2010; Steinberg, 2011). Additionally, females were more likely to enroll than males (Heinrich et al., 2010). Participation rates also varied by grade level with the highest participation in elementary schools and grades with state standardized testing (Steinberg, 2011; Gill et al., 2008). Students with lower prior test scores and GPAs were more likely to enroll in tutoring. However, students with lower prior attendance were less likely to enroll (Steinberg, 2011; Zimmer et al., 2010). Ford et al. (2012) also found that among three states in the Appalachian region, SES enrollment rates were significantly higher for urban schools than for rural schools. In Virginia for example, 15% of eligible students from rural schools and 27% of students from urban schools were enrolled. Overall, while SES was intended to increase access to tutoring services for low-income students, eligible students did not have equitable access to services and overall take-up was low, suggesting that future efforts to promote equity through tutoring could benefit from considering alternative approaches to student enrollment and program implementation.

Researchers found that despite district efforts to share information about SES programs, parents often lacked clarity on the services offered which limited enrollment (Stewart & Good, 2016; Heinrich, 2010). Additionally, parents cited trouble with transportation and timing of the after-school SES sessions as key barriers to participation (Heinrich et al., 2010; Vernez et al., 2009). Given low participation rates, Springer et al. (2015) explored whether they could increase SES attendance among middle school students by providing incentives based on their attendance rates. They did not find a significant effect of a monetary incentive of up to $100. However, they found that a non-monetary incentive (i.e. an attendance

certificate) increased the percent of allocated tutoring hours students attended by 43 percentage points, with a larger effect for female than male students (56 percentage points versus 29 percentage points) (p. 467). Zusho & Barnett (2011) also explored take-up of an afterschool homework help program at a private high school and found that the only factor significantly correlated with tutoring attendance was the extent to which students valued being perceived as competent by teachers and peers.

Beyond NCLB SES, studies also described programs which selected students for tutoring based on teacher recommendations and skills assessments. Both Reading Partners and Reading Recovery programs employed program-based assessments to identify target students and craft their instructional approach. However, May et al. (2016) found that the selection process for Reading Recovery varied from school to school and decisions were sometimes made based on factors other than assessment scores, with some students excluded based on special education status or poor prior attendance. Principal support was key in implementing student selection with fidelity based on skills assessments. Trust that tutors were well prepared and effective was also of concern to teachers in the selection process. Across multiple types of tutoring programs, principals and teachers expressed hesitancy to place the lowest-performing students with tutors they perceived as minimally trained (Jones et al, 2004; Koyama, 2011; Worthy & Prater, 2003).

Program Schedule & Setting - Research consistently linked program schedule and setting to students' ability to access tutoring services. When surveyed, parents and students reported that NCLB SES programs were challenging to attend given their afterschool time and often off-site location requiring families to provide their own transportation (Vernez et al., 2009). Heinrich et al. (2010) found that 18% of students surveyed reported missing at least one SES session due to difficulty getting to or from tutoring. Cornelli Sanderson and Richards (2010) also found that responsibility for the care of younger siblings was a barrier to after-school attendance for 12% of youth surveyed. Additionally, researchers observed students coming and going throughout after-school SES sessions due to conflicts with clubs and sports

(Good et al., 2014). Similarly, one principal reported increased absences from tutoring after an Atlanta Public Schools tutoring program transitioned from a school day to after school program (Hallgren et al., 2017). Recognizing that transportation can be challenging for students, Leopold & Simington (2015) argued that public housing authorities are in a unique position to partner with schools and provide after-school tutoring close to home.

Tutoring programs can also potentially reach students during the school day. However, research suggests schools have mixed success in setting aside productive time and space in the building. Jacob et al. (2015) found that most schools across the country implementing the Reading Partners program were able to create a designated reading center. However, in some schools the small size of reading center rooms limited the number of students who could receive tutoring. Additionally, researchers found that some school principals and teachers resisted the implementation of tutoring programs that pulled students out of class during instructional time, particularly in schools with many pull-out supports (Jacob et al., 2015). For this reason, some schools in Atlanta switched from a pull-out to a push-in model with tutors supporting students within their own classrooms. However, because other conversations and instruction often took place at the same time as tutoring this model may cause distractions in the classroom context (Hallgren et al., 2017). Thus, while researchers emphasize the importance of finding the right time and setting for tutoring, they do not arrive at a clear-cut solution.

Curricular and Instructional Quality- The quality of curriculum and instruction is also a key consideration in understanding students' tutoring experience and was examined in ten studies. Three articles drew on tutoring session observations across five districts and 25 providers to understand the quality of NCLB SES instruction. These studies illustrated that small-group instruction alone does not necessarily indicate innovative teaching practices and, as a result, it can be beneficial to pay attention to how tutoring programs facilitate student learning. While SES tutoring tended to take place one-to-one or in small groups, overall sessions rated low on measures of academic rigor and higher-order thinking.

Ratings were particularly low for tutoring sessions taking place virtually. Additionally, many of the sessions observed relied on teacher-directed instruction and student self-directed completion of worksheets (Burch et al., 2016; Good et al., 2014; Heinrich et al., 2010). In a state-wide analysis of SES in Tennessee, Ross et al. (2008) found that slightly under 48.7% of district coordinators surveyed agreed or strongly agreed that SES providers adapted the tutoring services to their school's curriculum, although 89.8% agreed that services were aligned with state standards. Researchers also identified gaps between tutoring program descriptions and actual capabilities for serving English language learners and students with Individualized Education Plans (IEPs). Heinrich et al. (2010) found that while the majority of providers advertised that they could serve English language learners and students with IEPs, very few discussed using specific curriculum or instructional strategies to support these students. Instead, SES providers gave vague descriptions of practices such as slowing down or lowering the level of instruction and sometimes pairing students with bilingual tutors. Overall, some individual tutors provided strong instruction, but there were no provider-level strategies for ensuring quality (Good et al., 2014).

Articles on other national tutoring models and university professor-run tutoring programs differed in their assessment of the value of program-wide curricular policies for promoting high-quality instruction. Two studies argued that structured curricula can be beneficial, especially for volunteer and other non-professional tutors. Jacob et al. (2015) found that volunteer tutors confidently and consistently implemented Reading Partners' curriculum which has a prescribed lesson sequence based on students' diagnostics assessments and each lesson follows a consistent activity structure. Worthy & Prater (2003) also described an America Reads program which switched to a more structured curriculum, specifically designed to be implemented by volunteers after tutors struggled without clear structure to their lessons. However, Hallgren et al. (2017) found that tutors in Atlanta experienced tension between the implementation of a heavily scripted iReady tutoring intervention and their ability to collaborate with school staff to align with classroom content. Thus while curricula can provide welcome structure, it can also be important to consider how tutoring approaches relate to students' contexts.

Research on the practices of particularly strong college students and certified teacher tutors highlight the potential for tutors to develop personalized, assets-based instructional approaches given curricular flexibility. Two studies described skilled tutors who continually sought to identify their students' interests, strengths, and resources by thoughtfully observing students in tutoring sessions and went out of their way to establish ongoing communication with parents, teachers, and others in the students' support network. Tutors documented and reflected on their observations which then informed lesson planning. For the literacy tutors adapted their instruction by including varying their book selections based on student interests and also remaining flexible in their instructional plan, experimenting with a range of strategies when student growth or engagement lagged (May et al., 2016; Worthy et al., 2001). Researchers also described strong tutors as particularly skilled at scaffolding student learning, knowing when to provide additional support and when to encourage independence. These tutors built student trust and comfort which they drew on "to simultaneously push and support their students, moving with urgency towards instructional goals while keeping the lessons interesting and fun" (May et al., 2016, p.96). However, researchers also observed tutors who were less attuned to their individual students and struggled to modulate instructional content and the level of support they provided (May et al., 2016; Worthy et al., 2001). Few studies explored whether tutors grew in these skills over time through training, coaching, and ongoing practice. Walker (2007) described a peer tutoring program in high school math and observed a shift in tutor practices throughout a semester with tutors posing more conceptual questions and spending less time directly walking students through a procedure for solving a particular problem. Tutoring program policies and norms may also influence tutors' approaches, although little research was available on this front. Worthy et al. (2001) noted that the level of connection formed between strong tutors and students' families went well beyond the program's expectations, suggesting that shifting program expectations may promote stronger instruction. Overall, existing research suggests that tutoring organization structures, curricular materials, and tutor training and skills all contribute to the quality of instruction provided to students.

Student-Tutor Relationships - Strong tutors appear to draw on trusting relationships with students to inform personalized instructional approaches, as described above. Six studies touched on tutors' approaches to building these relationships and tutors' observations of the influence of relationships on student behavior. This research was limited due to its heavy reliance on tutor observations of their own practices and university professors observing their own students as they serve as tutors. We found no studies which reported on students' or families' perspectives on tutoring relationships and no studies which systematically documented relationships over time.

Four studies that drew on the written reflections of college student tutors described similar strategies for developing student trust. In both Polansky et al. (2010) and Worthy and Patterson (2001), tutors described positioning themselves as supportive friends or buddies and tutoring as a space for growth, not punishment. Tutors also described taking time in and out of tutoring sessions to discuss students' lives and identify shared interests. In Friedland and Truscott (2005), tutors also reported using humor to create a comfortable tutoring environment and reported engaging students in problem-solving regarding academic and behavioral challenges beyond the tutoring sessions themselves. Lysaker et al. (2004) identified that in particularly successful student-tutor pairs, tutors set a positive tone regarding their students' abilities and expressed hope that their students would progress, responded to their student's moods and interests, and participated in literacy tasks alongside the student producing a "shared experience in which it would be difficult to distinguish the tutor from tutee simply taking stock of the tasks in which each was engaged," (p. 34). In contrast, in less successful pairs, tutors expressed feeling time pressure to complete specific tasks within each session, expressed a lack of optimism about their students' ability to progress in their literacy skills, and positioned themselves as experts and maintained a clear hierarchy in their relationships with students.

Two studies also touched on the roles of age, race, class, and other social identities in student-tutor relationships. Walker (2007) described how high school peer tutors made jokes and related mathematical language to familiar terms when explaining math problems which encouraged student participation and enjoyment of the tutoring program. The program's university student advisors mentioned this as a strength of the peer tutors and something they could learn from for their own instruction. Worthy & Patterson (2001) described one situation in which a student and tutor appeared to connect through sharing about their different cultural backgrounds and enjoyed learning from one another. Another tutor in the program emphasized the benefits for students of working with a tutor who shared their language and culture. In a reflection, the tutor shared: "Before I started working with Rose, everyone (you guys, her teacher) told me how shy and quiet she was. Well, she isn't with me!" (p. 335) The tutor also reported shifting a teacher's view of the student's capabilities and needs.

While research found that establishing strong tutor-student relationships happen naturally for some student-tutor pairs, studies also highlighted that care is needed in preparing students and tutors for positive engagement. Worthy & Patterson (2001) found that about one-third of tutors became frustrated with student behavior at some point in their relationship and that some tutors felt discouraged when they did not immediately feel a strong connection to their student. Conversations with program leaders and other tutors were important to respond productively to these concerns. Marita et al. (2018) found that when tutoring takes place in small groups, social dynamics between students can also influence the dynamics of tutoring sessions. The researchers conducted a detailed analysis of the behavior of one eighth grader with a learning disability as he participated in one-to-one and small group tutoring sessions. While working one-on-one the student maintained focus with his tutor and was willing to engage in more difficult tasks. In contrast, when working with peers, the student "spoke confidently, even when he was unsure of an answer, likely to seem as if he knew the answers in front of his peers, and made excuses for incorrect answers" (p.149). In this situation, the one-on-one environment allowed the student to engage

more fully with the tutor and content without the distraction of peer relationships. However, no other research studies explored the particular dynamics of tutoring in small group settings.

Overall, existing tutoring research provides some initial indications of key factors related to tutoring implementation and experience. In particular, extant research argues that a student's access to quality tutoring is influenced by broader dynamics in the market for tutoring providers, local organizations and buy-in for tutoring policies, and program and tutor-level approaches to tutoring relationships and instruction. However, only a handful of studies provide relevant evidence and they explored a limited range of policy and tutoring contexts.

Research Question 3: *How does tutoring influence students, tutors, teachers, families, and others involved in tutoring programs?*

We identified 14 studies with findings related to how tutoring influenced those involved. We found that eight studies examined effects on student outcomes and six on tutor outcomes. No studies discussed the influence of tutoring on teachers or families, though some studies included focus groups of parents. Because the goal of this synthesis was to broaden our understanding of tutoring implementation and experience rather than report on the causal effects of tutoring on student test scores, we do not report on effect sizes for tutoring programs as a whole. Instead, we focus on the mechanisms by which tutoring may influence students and tutors.

Influence on Students - Of the eight studies which addressed student outcomes, four studies focused on trends in student test scores and five relied on teacher and tutor reports of perceived student impact. No studies systematically assessed potential spill-over effects of tutoring for other students not receiving tutoring themselves. Table 5 summarizes studies of the variation in student test scores across tutoring programs which varied in design and implementation. These studies were observational, utilizing existing

variation across SES provider approaches (Burch et al. 2016; Jones 2014; Zimmer et al. 2010) and district SES policies over time (Heinrich et al., 2014) to determine the association between particular program features and student test scores. We cannot be certain the tutoring design features themselves caused greater student outcomes, because we do not know enough about how their students and sites varied. However, even given these methodological limitations, the studies provide some hypotheses about influential program features. See Table 5 for a summary of the associations found between specific program features and student test scores.[2] Additionally, Burch et al. (2016) explored the extent to which different groups of students had equitable access to tutoring design features associated with positive outcomes. They found that among students enrolled with digital SES providers, English-language learners and students with disabilities were less likely to receive synchronous tutoring, a model associated with more favorable standardized test scores.

Table 5. Associations between tutoring design and student achievement

Feature	**Study Finding**	**Source**
Dosage	The few instances where researchers found positive program effects coincide with "natural policy experiments, in which limited-time policies or program changes directly increased the number of hours of OST tutoring that students received" (p.484).[3]	Heinrich et al, 2014
Tutor Experience	Tutoring sites with a larger percentage of staff with four or more years of tutoring experience tended to have slightly higher achievement gains in math (.003 SD).	Zimmer et al, 2010
Student Groupings	Tutoring sites where "students are often or always tutored by skill level" (p.26) tended to have higher gains in math (.47 SD) and	Zimmer et al, 2010

[2]Heinrich & Nisar, 2013 also provided some initial hypotheses regarding effective tutoring program designs, although it is excluded from the synthesis as it primarily focused on estimated SES provider effectiveness. Among SES providers in Chicago Public Schools 2008-2011, the district-run program was associated with the largest gains in student test scores. The researchers note that the CPS program employed certified teachers and school-based coordinators to support program implementation. Additionally, students attending the CPS program received nearly double as many hours of tutoring as other providers due in part to the lower hourly rate charged by the district for SES services.

[3] Hickey & Flynn (2020) also explored program dosage in a randomized controlled trial comparing students assigned to 15 versus 25 weeks of one-on-one reading and math tutoring and found no significant difference between the two groups. However, the study considered a relatively small sample, just 36 students in each group. This study was conducted in Canada and is therefore not included in our synthesis.

	reading (.31 SD).	
Instructional Focus	Sites where "tutoring services are intended to fill in gaps in content" (p.26) tended to have higher gains in reading (.17 SD).	Zimmer et al, 2010
Instructional Driver	Comparing digital tutoring providers whose instruction was tutor-driven, tutor-with-software-driven, and curriculum-based software-driven: - The combination of tutor-with-software and tutor-driven was associated with the smallest effects for math and was billed at the highest hourly rate (.106 SD less than tutor-structured). - Curriculum-based software-driven was associated with significantly smaller effects for reading than tutoring which combined tutor-driven and software-driven (- .142 SD)	Burch et al, 2016
Tutor Location	Comparing digital tutoring providers whose instruction was fact-to-face, virtual, and blended face-to-face and virtual: - Face-to-face tutoring was associated with the largest effects for math (.153 SD greater than blended face-to-face and online). Blended face-to-face and virtual had the highest average hourly costs and were associated with the smallest effects for math. - No statistically significant association was found between tutor location and reading outcomes. Programs combining face-to-face and digital instruction were charging the most and so these groups of students were also receiving fewer hours of tutoring due to SES cost set-up.	Burch et al, 2016
Tutor Synchronicity	Comparing digital tutoring providers whose instruction was synchronous, asynchronous, and a combination of the two (blended), synchronous tutoring was positively associated with students' math achievement (.104 SD when compared to blended programs). English language learners, Hispanic students, and students with disabilities were significantly less likely to receive tutoring in synchronous formats.	Burch et al, 2016

Five studies considered teacher and tutor reports of student outcomes and all found perceived improvements in students' academic performance or increased confidence and participation in classroom instruction. Friedland & Truscott (2005) and Moss et al. (2001) employed standardized interview and survey rating scales and found that students, teachers, and tutors reported improvement in reading skills based on their participation in the tutoring programs studied. Further, researchers highlighted perceived

impacts of tutoring on students' confidence including willingness to read aloud (Friedland & Truscott, 2005; Jones et al., 2014). Gest & Gest (2005) monitored the classroom behaviors of a group of tutored and non-tutored students before and after a tutoring program was administered. They found that students who had received tutoring increased their time-on-task during whole-class instruction, suggesting that tutoring may have beneficial spill-over effects on students' ability to engage with instruction in other settings. In contrast, Polansky et al. (2010) highlighted school conditions that may limit tutoring's impact. One tutor reflected that they saw their tutee's grades improving. However, they felt unable to intervene in broader school dynamics they observed, such as racial disparity in tracking and teachers' perceptions of student ability, which hampered student success.

Influence on Tutors - Studies on how tutoring influences tutors primarily drew on tutor written reflections, survey responses, and researcher perceptions of learning by tutors who were students in their teacher preparation courses. All studies focused on undergraduate tutors specifically, and provided little information on the impact of being a tutor on other demographic groups. The research on tutor learning is highly limited by this reliance on written coursework as the primary data source, and few authors explored the potential implications of drawing on graded assignments for the scope and validity of their findings.

Hoffman et al. (2018) provided the most in-depth analysis of the role of tutoring experiences embedded in teacher training programs. This article responded to the concern that by participating in classroom observations, pre-service teachers may adopt practices that reinforce inequitable status quos in education. Instead, they found that starting with 1-to-1 instruction and then increasing to progressively larger student groups and students with greater academic needs could help scaffold pre-service teacher learning. Researchers found that tutors became increasingly reflective and responsive to student needs when their training was scaffolded in this way.

Three studies reported the extent to which student-tutor relationships served as a driver for tutors' positive expectations and culturally responsive practices. Worthy & Patterson (2001) note that student-tutor relationships may influence tutors' perceptions of their students. Specifically, they found suggestive evidence that positive relationships between tutors and students facilitated a change from a focus on students as "lazy" or "learning disabled" to a focus on students' love for and dedication to learning (p.333). They characterize this pattern as an emerging theme that requires further exploration. Similarly, Bennett (2013) found that tutoring experience was "valuable training to teach students from diverse backgrounds" (p. 392). However, the author noted variation in the extent to which pre-service teachers' discussion of cultural responsiveness and their students' backgrounds evolved throughout the program which may have been related to the amount of time spent working with students individually. In contrast, Walker (2007) found little change in the attitudes of undergraduate tutoring program advisors who continued to perceive students as lacking in motivation throughout the program.

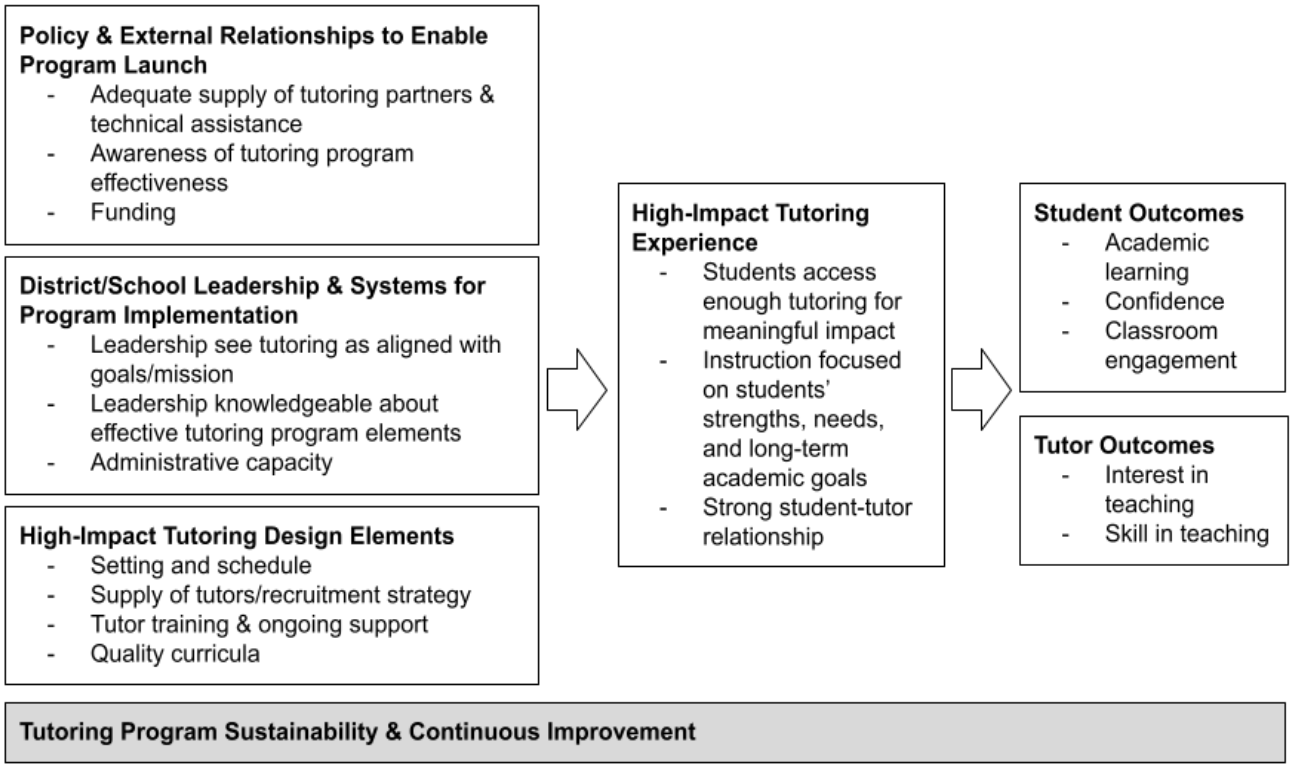
Four studies explored the role of tutoring programs as sources for future teachers and in particular, asked whether tutoring could help to increase the racial and linguistic diversity of the teacher workforce. These studies draw primarily on surveys and interviews with tutors already enrolled in teacher-preparation programs, and no study systematically tracked the career aspirations of tutors over time. Jimenez-Silva et al. (2021) surveyed California Mini Corps tutors who served migratory students and found that 71% of participants planned to become teachers with the goal "to impact future students in their community" (p.8). Similar to the students they tutored, most participants spoke Spanish, with 77% reporting that they spoke a language other than English most of the time in their home growing up. Cherfas et al. (2021) identified after-school programs as an underutilized stepping stone to teaching. They found that pre-service teachers believed their after-school experiences strengthened their "commitment to teaching in the communities where they grew up, and to working with students of color," in addition to building comfort and skills working with students (p.5). Unfortunately, they found that few teacher preparation programs were intentionally recruiting afterschool staff members. Finally, in contrast, Worthy & Paterson (2001)

found that a few pre-service teachers began to question their decision to become teachers based on early challenges relating to students in tutoring sessions. Researchers emphasized the importance of providing ongoing support for tutors as they worked through these challenges.

Discussion

Tutoring one-on-one or in small groups stands out as an especially promising instructional approach for supporting students' academic growth. A number of quantitative meta-analyses find large effects of tutoring programs across grade levels on both math and reading assessments (Dietrichson et al., 2017; Nickow et al., 2020; Salavin et al., 2011). In this study, we supplement and complement the meta-analyses of the findings of random control trials of tutoring programs with a synthesis of the broader literature on tutoring. In line with RCTs of tutoring, we find support for tutoring in the descriptive literature with students, tutors, and teachers reporting positive experiences in tutoring programs (Friedland & Truscott, 2005; Jones et al., 2014). However, we find evidence that tutoring programs, in many cases, can fail to reach most targeted students (Vernez et al., 2009; Heinrich et al., 2010), vary in instructional quality (Good et al., 2014; Worthy & Prater, 2003), and/or terminate within a year of implementation, proving unsustainable (Hallgren et al., 2017). This variation in tutoring program outcomes highlights the importance of program design and implementation processes when aiming to scale and sustain effective tutoring. While ranging in their research methods and setting, the studies we review identify a common set of factors that influenced implementation across a range of tutoring program contexts. See Figure 2 for a summary of these factors which we describe in greater detail in the following paragraphs.

Figure 2. Common factors which influence tutoring implementation.



Policy & External Relationships to Enable Program Launch - Across the studies we reviewed, tutoring programs did not emerge in isolation within a school district or other educational service provider. Instead, relationships with institutions of higher education (Worthy et al, 2001), community organizations (Leopold & Simington, 2015), non-profit (Jacob et al., 2015), and for-profit organizations (Heinrich & Good, 2018) were instrumental for program provision. Gaps in tutoring services for high school students, English language learners, and students with disabilities emerged as a key theme as partners lacked expertise or willingness to invest in these areas (Gill et al., 2008; Heinrich et al., 2010).

Previous federal policies have attempted to increase access to tutoring providers with limited success, providing key lessons for future efforts to expand tutoring partnerships. NCLB SES policy explicitly attempted to increase the number of tutoring providers in the market. However, due to prohibitive start-up

costs for smaller tutoring organizations and limited ability for parents to access information on program design and effectiveness, tutoring access remained limited even with ample federal investment (Burch et al., 2007). Similarly, the America Reads initiative attempted to increase tutoring availability by encouraging college students to serve as tutors in local elementary schools through an expansion of federal work study and AmeriCorps programs. However, insufficient investment in program leadership and support limited the scope and sustainability of some program sites (Worthy & Prater, 2003). Across these cases, tutoring implementation required financial investment, administrative support and actionable information on program quality to inform decision making in order to develop and sustain program partnerships.

The follow questions emerge as important next steps in understanding conditions for tutoring launch:

1. How can federal, state and local policies influence the availability of tutoring providers and technical assistance? In particular, what policies support quality tutoring for high school students, English language learners, students with disabilities, and other groups for whom the availability of tutoring providers has been limited?
2. What do strong partnerships for tutoring look like and how might policies facilitate the formation of strong partnerships?
3. What potential funding models, specifically related to staffing, could support and sustain tutoring?

District/School Leadership & Systems for Program Implementation - While external partnerships may help facilitate tutoring program launch, ongoing support is needed from school and district leaders in order to implement programs effectively. Education leaders can serve as gatekeepers of student and staff time, school space, and data/documentation on student's skills and instructional needs (May et al., 2016; Koyama, 2011). Thus, in order for a program to succeed, leadership buy-in, particularly principal support, is important.

Initial research on the facilitators of support for tutoring programs highlighted the importance of leaders' perceptions of tutoring as aligned with and essential for reaching the overarching goals for their school. Further, it is helpful for leaders to be knowledgeable about the specific dimensions of a tutoring program that facilitates its success, for example, a particular tutor recruitment strategy, a minimum dosage or frequency of tutoring sessions, or a specific curricular strategy (May et al., 2016). Implementing these strategies with fidelity often requires the investment and prioritization of school space, time, and staff, factors that can be fostered by strong support or hindered by resistant leaders (Koyama, 2011). Additionally, in cases where tutoring is happening at schools, on-site observations are a recurring strategy for program quality control and continuous improvement (Heinrich & Good, 2018), an effort that may be assisted by school leadership with a firm handle on the qualities of effective tutoring programs. In addition to leader support, research highlights the essential role of paid administrative staff in facilitating tutoring logistics from tutor recruitment and hiring to arranging tutoring schedules, to creating systems for student progress monitoring (Worthy & Prater, 2003; Jacob et al., 2015).

In this area further research is needed to explore the following:

1. How can schools leverage personalized instruction/tutoring in their instructional strategy?
2. What approaches help district leaders, school leaders, teachers, families, and community members learn about elements of effective tutoring programs?
3. What resources and adjustments in existing administrative systems ease the administrative burden of tutoring programs for schools?

High-Impact Tutoring Design Elements - In addition to highlighting the role of strategic relationships and the support of education leaders, existing research identifies a few key program hallmarks which influence the tutoring students receive - tutoring setting and schedule, tutor recruitment, tutor training and ongoing support, and quality tutoring curricula. For tutoring to be beneficial, students have to enroll and

they have to attend. Research identifies that the schedule and setting of tutoring strongly influence students' access. There is no one-size-fits-all approach for when and where tutoring should take place. However, situating tutoring within students' existing school day minimizes commonly cited barriers to participation including transportation and conflicts with after-school commitments. Strong coordination between school leaders, tutoring providers, teachers, and tutors helps to integrate tutoring into school schedules in a way that supports rather than detracts from broader instructional efforts (Vernez et al., 2009; Good et al., 2014; Hallgren et al., 2017). Some communities have strong demand for after-school tutoring; collaboration with families, community organizations, and other public service providers in these communities can improve the accessibility of out-of-school time tutoring by identifying context-informed strategies (Leopold & Simington, 2015; Cornelli Sanderson & Richards, 2010).

Tutors themselves play a critical role in the quality of tutoring. Many tutoring programs profiled in the existing research struggled to recruit a sufficient number of tutors to reach the number of students they were attempting to serve. Programs described more effective tutor recruitment when paid program staff devoted significant time to building relationships and crafting a recruitment strategy (Jacob et al., 2015; May et al., 2016). Once hired, training and ongoing feedback are essential for building confidence and instructional skill. Lack of preparation and support was a common reason cited for tutor turnover (Worthy & Prater, 2003). Finally, programs need strong curricula that fit the needs of tutors and students. Curricular needs may differ depending on the existing skills of the tutors, with different needs for certified teachers than for undergraduate students, for example (Jacob et al., 2015; Worthy & Prater, 2003). Programs can adapt instruction to the needs of specific students by using diagnostic assessments linked to a curriculum sequence, although skilled tutors can take initiative to personalize instruction within and beyond specific curricular sequences (Worthy et al, 2001; May et al., 2016).

In this area further research is needed to understand:

1. How can tutoring leverage and align with existing school structures including classroom instruction and multiple tiers of support programs?
2. What tutor recruitment strategies are effective in different contexts?
3. What training best supports different types of tutors – considering training content, modality, and timing – so that tutors develop the necessary skills, including the facility in forming trusting student relationships, focusing on student's assets, and personalizing instruction to student needs?

High-Impact Tutoring Experience - Building off of the design elements discussed above, research emphasizes the importance of students attending tutoring sessions on a regular basis over an extended period of time, in order for supportive student-tutor relationships to form and for tutors to identify and implement instructional approaches that are beneficial for a particular student (Worthy & Patterson, 2001). However, the existing research does not specify the amount and frequency of tutoring that is most beneficial, and this optimum may vary by student needs. In many programs researched, tutoring dosage happened by default due to limited program budgets, tutor turnover, student movement, and the academic calendar year, not due to strategic program planning.

Existing research also provides some descriptions of what strong tutoring looks like in tutoring sessions. As described above, tutoring instruction is supported by tutor recruitment, training, and curricular materials. Strong instruction is responsive to each student's existing skill level and focuses on long-term academic goals. Instruction draws on a student's interests and strengths to pique that student's interest and facilitate collaboration. Quality instruction is informed by the tutor's strong relationships with their students through which tutors learn about students and their life contexts, applying this knowledge to lesson planning and instruction. Tutors are personally invested in the success of their students and have hope for their student's academic progress (Lysaker et al., 2004; May et al., 2016; Worthy & Patterson, 2001).

In this area, further research is needed to explore:

1. What dosage, frequency, and length is most beneficial for different age groups and student skill levels? And what administrative/evaluative mechanisms work in ensuring that children are getting the dosage that they individually need?
2. Which instructional approaches foster strong student-tutor relationships?
3. What processes and data help support the student-tutor feedback loop of relationships and instruction?

Tutoring Outcomes - Research shows that tutoring can affect students' academic knowledge directly through instruction as well as indirectly through increased confidence and engagement in larger-group classroom settings (Friedland & Truscott, 2005; Gest & Gest, 2005 Moss et al., 2001). Working as a tutor also can increase tutors' interest in and skills for becoming a classroom teacher (Cherfas et al., 2021; Jimenez-Silva et al., 2021). However, the existing literature does not provide insights into how tutoring influences students and tutors in the long run, nor how tutoring programs affect teachers, schools, and local communities.

Open questions include:

1. How does tutoring influence non-academic outcomes for students?
2. Does tutoring influence different students differently?
3. How might participation in a tutoring program influence tutors, including their interest in classroom teaching?
4. How do tutoring programs influence a wide range of stakeholders including paraprofessionals, teachers, other school staff and local communities?

Conclusion - The existing literature on tutoring provides initial suggestions of the factors influencing tutoring implementation. Across existing studies, researchers emphasized strategic partnerships,

integration with a school's broader goals, and focus on recruiting, training, and supporting strong tutors as key elements in tutoring implementation. One of the main challenges we encountered while conducting this synthesis was the lack of shared structures for understanding tutoring implementation between articles. Research questions range in scope and focus from the specific experiences of a handful of college student tutors to explorations of the administrative data of tens of thousands of students. We outline an initial structure for understanding tutoring implementation above in the hopes of providing a starting point for future research to build on existing tutoring knowledge. With a common understanding of the definition of tutoring, future research studies can employ a diverse range of methodologies while speaking to a common issue, furthering our knowledge of tutoring implementation and experience across different tutoring programs.

Existing studies provide a strong basis for future research in an expanded range of tutoring program designs and contexts. In particular, additional studies which focus on district-driven tutoring initiatives, tutoring taking place during the school day, and tutoring in less-researched grade levels and subject areas like middle and high school literacy or elementary math and science, are needed. Ultimately, if tutoring is going to reach more students who could benefit, tutoring programs are going to need to expand the number of students they serve while building sustainable organizational structures and practices. Further research is needed on how to sustain tutoring efforts beyond program launch and early implementation.

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Watts, G. W., Bryant, D. P., & Carroll, M. L. (2019). Students With Emotional–Behavioral Disorders as Cross-Age Tutors: A Synthesis of the Literature. *Behavioral Disorders*, *44*(3), 131–147. doi:10.1177/0198742918771914

Wilson, S. M., & Anagnostopoulos, D. (2021). Methodological Guidance Paper: The Craft of Conducting a Qualitative Review. *Review of Educational Research*, *91*(5), 651–670. doi:10.3102/00346543211012755

*Worthy, J., & Patterson, E. (2001). “I can't wait to see Carlos!”: Preservice teachers, situated learning, and personal relationships with students. *Journal of Literacy Research*, *33*(2), 303-344. doi:10.1080/10862960109548113

*Worthy, J., Patterson, E., Salas, R., Prater, S., & Turner, M. (2001). “More than just reading”: The human factor in reaching resistant readers. *Literacy Research and Instruction*, *41*(2), 177-201. doi:10.1080/19388070209558364

*Worthy, J., Prater, K., & Pennington, J. (2003). “It's a Program That Looks Great on Paper”: The Challenge of America Reads. *Journal of Literacy Research*, *35*(3), 879-910. doi:10.1207/s15548430jlr3503_4

*Zimmer, R., Hamilton, L., & Christina, R. (2010). After-school tutoring in the context of no child left behind: Effectiveness of two programs in the Pittsburgh public schools. *Economics of education Review*, *29*(1), 18-28. doi:10.1016/j.econedurev.2009.02.005

*Zusho, A., & Barnett, P. A. (2011). Personal and contextual determinants of ethnically diverse female high school students’ patterns of academic help seeking and help avoidance in English and

mathematics. *Contemporary Educational Psychology*, *36*(2), 152-164.

doi:10.1016/j.cedpsych.2011.02.002

Appendix – Studies Included in the Synthesis with Descriptives

APA Citation	**Program Type**	**Grade Levels & Subject Areas**	**Program Timing**
Bennett, S. V. (2013). Effective Facets of a Field Experience That Contributed to Eight Preservice Teachers' Developing Understandings About Culturally Responsive Teaching. Urban Education, 48(3), 380–419. https://doi.org/10.1177/0042085912452155	Researcher-Run	Elementary Literacy	Out-of-School
Burch, P., Good, A., & Heinrich, C. (2016). Improving Access To, Quality, and the Effectiveness of Digital Tutoring in K-12 Education. Educational Evaluation and Policy Analysis, 38(1), 65–87.	SES	Mix of Elementary, Middle, and High School; Mix of Reading & Math	Out-of-School
Burch, P., Steinberg, M., & Donovan, J. (2007). Supplemental educational services and NCLB: Policy assumptions, market practices, emerging issues. Educational Evaluation and Policy Analysis, 29(2), 115-133. Retrieved from https://www.proquest.com/scholarly-journals/supplemental-educational-services-nclb-policy/docview/197222769/se-2?accountid=9758	SES	Mix of Elementary, Middle, and High School; Mix of Reading & Math	Out-of-School
Cornelli Sanderson, R., & Richards, M. H. (2010). The After-School Needs and Resources of a Low-Income Urban Community: Surveying Youth and Parents for Community Change. American Journal of Community Psychology, 45(3/4), 430–440. https://doi.org/10.1007/s10464-010-9309-x	NA	Study did not focus on a particular tutoring program	Out-of-School
Gest, S. D., & Gest, J. M. (2005). Reading Tutoring for Students at Academic and Behavioral Risk: Effects on Time-On-Task in the Classroom. Education and Treatment of Children, 28(1), 25–47. http://www.jstor.org/stable/42899826	Researcher-Run	Elementary Literacy	During School
Good, A. G., Burch, P. E., Stewart, M. S., Acosta, R., & Heinrich, C. (2014). Instruction Matters: Lessons from a Mixed-Method Evaluation of Out-of-School Time Tutoring under No Child Left Behind. Teachers College Record, 116(3).	SES	Mix of Elementary, Middle, and High School;	Out-of-School

		Mix of Reading & Math	
Heinrich, C. J., & Good, A. (2018). informed practice improvements: exploring linkages between school district use of research evidence and educational outcomes over time. School Effectiveness and School Improvement, 29(3), 418-445.	SES	Mix of Elementary, Middle, and High School; Mix of Reading & Math	Out-of-School
Heinrich, C. J., Burch, P., Good, A., Acosta, R., Cheng, H., Dillender, M., . . . Stewart, M. (2014). Improving the implementation and effectiveness of out-of-school-time tutoring. Journal of Policy Analysis and Management, 33(2), 471. doi:http://dx.doi.org/10.1002/pam.21745	SES	Mix of Elementary, Middle, and High School; Mix of Reading & Math	Out-of-School
Heinrich, C. J., Meyer, R. H., & Whitten, G. (2010). Supplemental education services under no child left behind: Who signs up, and what do they gain? Educational Evaluation and Policy Analysis, 32(2), 273. Retrieved from https://www.proquest.com/scholarly-journals/supplemental-education-services-under-no-child/docview/750564086/se-2?accountid=9758	SES	Mix of Elementary, Middle, and High School; Mix of Reading & Math	Out-of-School
Holloway, S. L., & Pimlott, W. H. (2020). Marketising private tuition: Representations of tutors' competence, entrepreneurial opportunities and service legitimation in home tutoring business manuals. British Educational Research Journal, 46(1), 205–221. https://doi-org.revproxy.brown.edu/10.1002/berj.3575	NA	Study did not focus on a particular tutoring program	Study did not focus on a specific tutoring program
Jimenez-Silva, M., Ruiz, N., & Smith, S. (2021). Lessons learned from exploring the potential of California's mini-corps tutors as future bilingual teachers. International Journal of Bilingual Education and Bilingualism, 1-13.	Other National	Information on grade level and subject area was not provided	Information on program timing is not provided
Jones, B. D., Stallings, D. T., & Malone, D. (2004). Prospective Teachers as Tutors: Measuring the Impact of a Service-Learning Program on Upper Elementary Students. Teacher Education Quarterly, 31(3), 99–118.	Researcher-Run	Elementary Literacy	During School
Koyama, J. (2011). Principals, power, and policy: Enacting "supplemental educational services". Anthropology & Education Quarterly, 42(1), 20-36.	SES	Mix of Elementary, Middle, and High School; Mix of Reading & Math	Out-of-School

Marita, S., Hord, C., & Gamel, Z. (2018). Adapting Instruction in Response to Academic and Social Situational Tendencies: Supporting a Student with a Learning Disability. Learning Disabilities: A Contemporary Journal, 16(2), 139–156.	Researcher-Run	Middle Grades Math	During School
Okwumabua, T. M., Walker, K. M., Hu, X., & Watson, A. (2011). An exploration of African American students' attitudes toward online learning. Urban Education, 46(2), 241-250.	Researcher-Run	Mixed Grade Levels Math	Information on program timing is not provided
Polansky, S. G., Andrianoff, T., Bernard, J. B., Flores, A., Gardocki, I. A., Handerhan, R. J., ... & Young, L. (2010). Tales of tutors: The role of narrative in language learning and service learning. Foreign Language Annals, 43(2), 304-323.	Researcher-Run	High School World Languages	During School
Steinberg, M. P. (2011). Educational choice and student participation: The case of the supplemental educational services provision in chicago public schools. Educational Evaluation and Policy Analysis, 33(2), 159. Retrieved from https://www.proquest.com/scholarly-journals/educational-choice-student-participation-case/docview/874329278/se-2?accountid=9758	SES	Mix of Elementary, Middle, and High School; Mix of Reading & Math	Out-of-School
Stewart, M. S., & Good, A. G. (2016). Marketing, information, and parental choice: A Comparative case study of third-party, federally funded out-of-school-time services. PJE.Peabody Journal of Education, 91(1), 100-120. doi:http://dx.doi.org/10.1080/0161956X.2016.1119594	SES	Mix of Elementary, Middle, and High School; Mix of Reading & Math	Out-of-School
Walker, E. N. (2007). The Structure and Culture of Developing a Mathematics Tutoring Collaborative in an Urban High School. High School Journal, 91(1), 57–67. https://doi.org/10.1353/hsj.2007.0019	Researcher-Run	High School Math	Out-of-School
Worthy, J., & Patterson, E. (2001). "I Can't Wait to See Carlos!": Preservice Teachers, Situated Learning, and Personal Relationships with Students. Journal of Literacy Research, 33(2), 303–344. https://doi-org.revproxy.brown.edu/10.1080/10862960109548113	Researcher-Run	Elementary Literacy	Mix of During School and Out-of-School
Worthy, J., & Prater, K. (2003). "It's a Program That Looks Great on Paper": The Challenge of America Reads. Journal of Literacy Research, 35(3), 879–910. https://doi.org/10.1207/s15548430jlr3503_4	Other National	Elementary Literacy	Mix of During School and Out-of-School
Worthy, J., Patterson, E., Salas, R., Prater, S., & Turner, M. (2001). "More than just reading": The human factor in reaching resistant readers. Literacy Research and Instruction, 41(2), 177-201.	Researcher-Run	Elementary Literacy	Out-of-School
Zimmer, R., Hamilton, L., & Christina, R. (2010). After-school tutoring in the context of no child left behind:	SES	Mix of Elementary,	Mix of During School and

Effectiveness of two programs in the Pittsburgh public schools. Economics of education Review, 29(1), 18-28.		Middle, and High School; Mix of Reading & Math	Out-of-School
Zusho, A., & Barnett, P. A. (2011). Personal and contextual determinants of ethnically diverse female high school students' patterns of academic help seeking and help avoidance in English and mathematics. Contemporary Educational Psychology, 36(2), 152-164.	Other Local	High School Homework Help	Out-of-School
Vernez, G., Naftel, S., Ross, K., Le Floch, K. C., Beighley, C., & Gill, B. (2009). State and Local Implementation of the" No Child Left Behind Act". Volume VII--Title I School Choice and Supplemental Educational Services. US Department of Education.	SES	Mix of Elementary, Middle, and High School; Mix of Reading & Math	Out-of-School
McBride, A. M., Gonzalez, E., Morrow-Howell, N., & McCrary, S. (2009). A case for stipends in volunteer service.	Other National	Information on grade level and subject area was not provided	Information on program timing is not provided
May, H., Sirinides, P. M., Gray, A., & Goldsworthy, H. (2016). Reading Recovery: An evaluation of the four-year i3 scale-up.	Other National	Elementary Literacy	During School
Leopold, J., & Simington, J. (2015). Housing and Education Partnerships: A Case Study of New Haven, Connecticut. Urban Institute.	Other Local	Study did not focus on a particular tutoring program	Out-of-School
Jacob, R., Armstrong, C., & Willard, J. (2015). Mobilizing volunteer tutors to improve student literacy: Implementation, impacts, and costs of the Reading Partners Program.	Other National	Elementary Literacy	Mix of During School and Out-of-School
Hallgren, K., Gonzalez, N., Choi, J., Kelly, K., Li, A., Ochoa, L., & Gill, B. (2017). The Atlanta Public Schools Turnaround Strategy After One Year: High Impact Tutoring and the Purpose Built Schools Partnership. Report submitted to the Atlanta Public Schools. Princeton, NJ: Mathematica Policy Research.	Other Local	Mix of Elementary, Middle, and High School; Mix of Reading & Math	During School
Gill, B., McCombs, J. S., Naftel, S., Ross, K., Song, M., Harmon, J., & Vernez, G. (2008). State and Local Implementation of the" No Child Left Behind Act." Volume IV--Title I School Choice and Supplemental Educational Services: Interim Report. US Department of Education.	SES	Mix of Elementary, Middle, and High School;	Out-of-School

		Mix of Reading & Math	
Cherfas, L., Duncan, E., & Chan, W. Y. (2021). A Natural Fit: Placing After-School Staff of Color in Teacher Pipelines. Education Trust.	NA	Study did not focus on a particular tutoring program	Out-of-School
Moss, M., Swartz, J., Obeidallah, D., Stewart, G., & Greene, D. (2001). AmeriCorps Tutoring Outcomes Study.	Other National	Elementary Literacy	Information on program timing is not provided
Ross, S. M., Potter, A., Paek, J., McKay, D., Sanders, W., & Ashton, J. (2008). Implementation and outcomes of supplemental educational services: The Tennessee state-wide evaluation study. Journal of Education for Students Placed at Risk, 13(1), 26-58.	SES	Mix of Elementary, Middle, and High School; Mix of Reading & Math	Out-of-School
Ford, J., Harrison, L., Mokher, C., Franceschini, L., and Zoblotsky, T. (2012). A descriptive study of enrollment in supplemental educational services in the four REL Appalachia region states (Issues & Answers Report, REL 2012–No. 109). Washington, DC: U.S. Department of Education, Institute of Education Sciences, National Center for Education Evaluation and Regional Assistance, Regional Educational Laboratory Appalachia. Retrieved from http://ies.ed.gov/ncee/edlabs.	SES	Mix of Elementary, Middle, and High School; Mix of Reading & Math	Out-of-School
Heinrich, C. J. (2010). Third-party governance under No Child Left Behind: Accountability and performance management challenges. Journal of Public Administration Research and Theory, 20(suppl_1), i59-i80.	SES	Mix of Elementary, Middle, and High School; Mix of Reading & Math	Out-of-School
Springer, M. G., Rosenquist, B. A., & Swain, W. A. (2015). Monetary and nonmonetary student incentives for tutoring services: A randomized controlled trial. Journal of Research on Educational Effectiveness, 8(4), 453-474.	SES	Middle Grades, Mix of Reading & Math	Out-of-School
Lysaker, J., McCormick, K., & Brunette, C. C. (2004). Hope, happiness, and reciprocity: A thematic analysis of preservice teachers' relationships with their reading buddies. Literacy Research and Instruction, 44(2), 21-45.	Researcher-Run	Elementary Literacy	During School
Hoffman, J. V., Mosley Wetzel, M., & DeJulio, S. (2018). Multiple literacy tutoring experiences across a teacher preparation program: How can practice in hybrid spaces challenge the “practice makes practice” dilemma?. Action in Teacher Education, 40(1), 58-76.	Researcher-Run	Elementary Literacy	During School

Friedland, E. S., & Truscott, D. M. (2005). Building awareness and commitment of middle school students through literacy tutoring. Journal of Adolescent & Adult Literacy, 48(7), 550-562.	Researcher-Run	Middle Grades Literacy	During School