

Parents' Involvement in High-Stakes Language Assessment: *A Review of Test Impact on Parent Behavior*

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Abstract

This paper reviews a total of 20 empirical research studies concerning parents' behavior under the context of high-stakes language assessment, aiming to reveal the impact of the assessment on parents' behavior. The results show that (1) parents are typically involved in high-stakes language assessment process; (2) their involvement practice includes general (such as hiring tutors for children) and extreme involvement behavior (such as participating in movement against high-stakes testing); (3) no unanimous conclusion is reached concerning the effectiveness of parents' involvement in high-stakes language assessment; (4) multiple factors that affect parents' involvement in high-stakes language assessment are identified, including parents' perceptions of tests, their educational background, and the time they spend with their children. This study concludes that tests might influence the ways parents are involved in children's education. However, not all parents might be influenced by testing, and testing might have a positive impact on some parents but a negative impact on others. This synthesis has several practical implications. Firstly, it indicates that parents' involvement behavior in the context of high-stakes language assessment deserves to be further investigated. Secondly, it points that various intervention programs should be provided for parents to help them better support their children's learning and test preparation. The paper also offers several suggestions for future research.

Keywords: high-stakes language assessment, test impact, parents' involvement

1. Introduction

A wealth of research has shown that parents are typically engaged in their children's learning. This behavior is called parent academic involvement or parents' involvement (PI) in children's education, which is defined as "parents' interactions with schools and with their children to promote academic success" (Hill & Tyson, 2009, p. 741). Mounting evidence suggests that PI is effective for advancing student academic achievement, and the effect sizes are small to moderate (e.g., Fan & Chen, 2001; Hill & Tyson, 2009). Although many researchers are committed to exploring the factors that affect PI (e.g., Hoover-Dempsey & Sandler, 1995, 1997), few have treated assessment as an essential variable. It seems that PI has been widely investigated within the non-assessment field (Cheng, Andrews, & Yu, 2010; Dawadi, 2019).

Similarly, in the field of language assessment, studies investigating the impact of assessment on parents are scarce, specifically in what ways parents help their children to be successful in high-stakes assessments (Cheng et al., 2010; Tsagari & Cheng, 2017). To date, most of the existing research focused on parent perceptions of language tests (e.g., Desforges, Hughes, & Holden, 1994; Scott, 2007; Vandergrift, 2015) rather than parent behavior that is likely to be affected by assessments.

It is essential to explore test (Note 1) impact on PI behavior (Cheng et al., 2010; Dawadi, 2019) for several reasons. First, not only are parents one of the key test stakeholders (Scott, 2007), but they know their children best (Martínez, Martínez, R., & Pérez, 2004; Rutland & Hall, 2013). Second, tests might have an impact on PI in assessment—the behavior parents adopt to improve their children's academic achievement (Cheng et al., 2010). Third, it is argued that PI in language assessment might help children succeed in the tests (Reta, 2017). Yet, scarce empirical evidence has been provided to support the prediction that tests affect PI in assessment, which in turn impacts students' academic attainment.

Despite the importance of the topic, however, no systematic review of the literature has been conducted concerning test impact on PI. The review by Harris (2015) was the only one that can be found until now, but her study focused on parents’ understandings of and attitudes towards testing rather than parent behavior. This research attempts to fill this void by conducting a synthesis of test impact on parent behavior, interpreting parents’ involvement behavior under the context of high-stakes language assessment. In so doing, the following research questions are addressed:

RQ1: Are parents involved in the assessment process? If yes, how are they involved?

RQ2: Is parents’ involvement behavior in the assessment process effective for promoting students’ academic achievement? If yes, what is the effect size?

RQ3: What factors affect parents’ involvement behavior in the assessment process?

This synthesis begins by describing the procedure of searching, screening, and analyzing literature. Then, it reports the findings and discusses the test impact on parents’ behavior. Finally, implications are expounded.

2. Methods

This research synthesis conducted a literature search in major electronic databases such as the Educational Resources Information Center (ERIC) and Google Scholar, using the following keywords: parent(s) and assessment(s)/ test(s)/testing/ high-stakes test(s)/ high-stakes testing, the impact/ consequence/ effect of high-stake assessment(s) /test(s)/ testing on parent(s), involving parents in children's assessment(s) /test(s)/ testing, and parents’ involvement in assessment(s)/ test(s)/ testing/ high-stakes test(s). Finally, 33 research studies were identified, which were carefully reviewed and screened based on the following criteria.

- This synthesis mainly focused on high-stakes language assessments, particularly English tests. Given the small number of studies specifically centering on the impact of high-stakes language assessment on parents, this synthesis also considered the studies investigating the entire high-stakes assessment program that includes language assessment;
- Due to the limited number of empirical research, this synthesis was not limited to peer-reviewed publications (Harris, 2015). However, in order to guarantee the reliability of the results, this synthesis only considered the studies with rigorous research design, which means that the studies reported how data were collected and analyzed, the research findings were consistent with the data collected, and the conclusions were aligned with the research findings (Henderson & Mapp, 2002);
- For the sake of focus, this synthesis did not include the assessment designed for special education.

Finally, 20 studies were included and they represented the following three categories:

- Research on parents’ general involvement behavior (N = 8);
- Research on parents’ extreme involvement behavior (N = 7);
- Research on parent intervention programs (N = 5).

These studies are listed in Tables 1-3. The main information retrieved from these studies included macro- and micro-context (educational background and target tests), research type (qualitative or quantitative; longitudinal or cross-sectional), methods of data collection and analysis, parent participants, sample size, research purpose, main findings, the content of the parent intervention program, effects and effect sizes reported.

Table 1. Research on Parents’ General Involvement Behavior

Literature	Macro-Micro-context	and	Research Type	Data Collection and Sample Size	Data Analysis	Parent Participants	Purpose	Main Findings (focused on parents’ behavior)
Barksdale-Ladd & Thomas (2000)	Elementary and secondary education in the US;	and	Qualitative research	Semi-structured interviews and focus groups (N = 20)	Identifying categories; Coding	Parents whose children attended school /university partnership schools; 10 parents from a Southern State and another 10 parents from a Northern State	To investigate (1) what parents know about education policies and how teachers prepare students for tests; (2) how parents prepare their children for tests; (3) how parents perceive the value of the tests and their children’s schools	Parents from the Southern state did not prepare their children for the test, while parents from the Northern state did.

Literature	Macro- and Micro-context	Research Type	Data Collection and Sample Size	Data Analysis	Parent Participants	Purpose	Main Findings (focused on parents' behavior)
Ferman (2004)	Secondary education in Israel; EFL National Oral Matriculation Test	Mixed method research	A student questionnaire (N = 120); Structured interviews with teachers (N = 18); Open interviews with regional inspectors (N = 3).	Qualitative data: Using the variables established in the questionnaires; Quantitative data: Using descriptive statistics	EFL teachers (Grades 11 to 12) and students with different ability levels (Grade 12), from three different types of high schools; No parent participant	To investigate whether the EFL Oral matriculation test has washback on the educational processes, the participants, and the products of teaching and learning	(1) Parents participated in the testing process, which was demonstrated by their urging children to learn for the test. (2) Parents hired tutors to help their children prepare for the test. (3) Parents whose children were at average ability level tended to employ more tutors for their children.
Martínez, Martínez, R., & Pérez (2004)	Elementary education in Spain; School academic assessments	Mixed methods research	A questionnaire, including closed and open-ended questions (N = 188)	Quantitative data: Descriptive statistics; Qualitative data: Not reported.	Parents of third graders from eight Spanish schools located in both urban and rural areas of the region of Asturias in Spain	To investigate parents' perceptions of school assessment	(1) Parents thought that the assessment provided useful information about their children's learning and in turn helped them better involve in their children's learning. (2) Parents involvement strategies related to assessment included communicating with teachers, helping with homework, encouragement, helping their children analyze the reason why they did not succeed in the assessment, and hiring a private tutor.
Cheng et al. (2010)	Secondary education in Hong Kong; School-based assessment (SBA)	Cross-sectional quantitative research	A parent questionnaire (N = 315)	Descriptive analysis; Exploratory factor analysis; Independent sample <i>t</i> -test, paired sample <i>t</i> -test, and multiple regressions	Parents of Secondary 4 students from two schools; Mostly from low-middle- or lower-class families	To investigate (1) parents' and students' perceptions of SBA and the impact of SBA on teaching and learning; (2) the relationship between parents' perceptions and students' perceptions	(1) Parents' level of education and the time they spent with their children had a positive effect on their support for their children in SBA. (2) Parents' perceived knowledge about SBA had a positive effect on their support for their children in SBA. (3) When parents perceived that SBA could be helpful for their children's learning, they would be more supportive of their children's SBA-related learning.
Holyk (2011)	Elementary education in Canada; Provincial Foundation Skills Assessment and classroom assessment	Qualitative research	Semi-structured interviews (N = 18)	Thematic analysis	Parents of Grade 4 students within the Lake Babine Nation	To investigate parents' perceptions of and involvement in assessment	Parents were involved in the assessment process by taking these strategies: helping with homework, communication with their children and teachers. Communicating with teachers was an effective way to learn assessment knowledge.
Dawadi (2019, 2020)	Secondary education in Nepal; Secondary Education Examination (SEE)	A mixed method research	Pre- and post-SEE semi-structured interviews with parents (N = 6);	Thematic analysis	Parents of grade 10 students (age 14-16); Most from low socioeconomic status families	To hear parents' voices and explore their perceptions of SEE and their support for the test	(1) All parents perceived that test preparation was a shared responsibility among students, parents, and teachers so that

Literature	Macro- and Micro-context	Research Type	Data Collection and Sample Size	Data Analysis	Parent Participants	Purpose	Main Findings (focused on parents' behavior)
Eizadirad (2020)	Elementary education in Canada; Education Quality and Accountability Office standardized test (EQAO standardized tes)	Qualitative research	pre-and post-SEE surveys and interviews with students; Case study with students Semi-structured interviews (N = 8)	Thematic analysis	Parents of grade 3 elementary school students, who identified themselves and their children as racialized	To hear racialized parents' voices regarding the impact of the EQAO standardized test on their children, their identities, and life experience	parents tried their best to provide support for their children's test preparation. (2) The strategies they used to involve in their children's test preparation included providing learning conditions at home, cooperating with neighbors and relatives, sending their children to cramming courses provided by children's school teachers, controlling children's amusement time, helping with homework, teaching test-taking strategies, and sharing test-taking experience. The last three strategies were only used by parents who had high levels of education. (3) As the exam was imminent, parents would adopt different language developing strategies. (4) Although parents were positively involved in their children's test preparation, their children's performance in SEE was bad. Parents were involved in their children's test preparation before the testing week, and the involvement strategies they used were: Encouragement, communication, reassurance, familiarizing their children with test questions through doing practice questions.

Table 2. Research on Parents' Extreme Involvement Behavior

Literature	Macro- and Micro-context	Research Type	Data Collection and Sample Size	Data Analysis	Parent Participants	Purpose	Main Findings
Pizmony-Levy & Saraisky (2016)	The high-stakes standardized testing climate in the US; Federally mandated educational assessments	Cross-sectional quantitative research	Online-question naire (N = 1641)	Descriptive statistics; multivariate analysis (logistic and multinomial logistic regression)	Parents participating in the movement: Largely white women, high socioeconomic status, highly educated, parents of school-age children	To investigate who participated in the movement, why and how they participated in, and what did they think about education policy	(1) Most of the Opt-Out movement participants were parents of public-school students. (2) Social media played a major role in mobilizing participants. (3) The reason for participating in the movement was not just their opposition to high-stakes standardized tests. Some of the parents disagreed with teaching to the test and judged teachers' performance by using students' scores on high-stakes tests.

Literature	Macro- and Micro-context	Research Type	Data Collection and Sample Size	Data Analysis	Parent Participants	Purpose	Main Findings
Abraham, Wassell, Luet, & Vitalone-Ra carro, (2018)	The high-stakes standardized testing climate in the US; The Partnership for Assessment of Readiness for College and Careers (PARCC) exam	Qualitative research	Participant observation, open-ended online-questionnaire (N = 242), focus group interviews (N = 8), and refusal letters	Thematic coding; Critical discourse analysis	Parents participating in the Opt-Out movement (Mostly white, middle-class females with higher education)	To investigate why and how parents refused the exam	(1) Parents did not trust the PARCC exam, and they thought the PARCC was invalid. The reason for this distrust was that parents perceived the PARCC as a politically driven initiative that was not appropriate for students' educational development. (2) Parents could play a clear and authoritative role in their children's experiences with state-mandated testing through their engagement, actions, and discourses.
Schroeder, Currin, & McCardle (2016)	The high-stakes standardized testing climate in the US; The high-stakes standardized tests	A critical ethnographic study	Online-questionnaire (N = 208), focus groups and individual interviews (N = 6)	Data analysis spiral	Parents participating in the movement: Largely white, middle-class women	To examine the reasons and larger aims of joining the Opt-Out movement	(1) Parents viewed the policies of using high-stakes testing to sort students, evaluate schools and teachers as "government overreach and the corporatization of public schools" (p.8). (2) They thought the educational policies were unjust to students and teachers. (3) They made use of Facebook to interact with each other and to learn more information concerning the detrimental effects of the educational policies, and they finally took action to fight against the policies.
Clayton, Bingham, & Ecks (2019)	The high-stakes standardized testing climate in the US; English Language Arts test	A quantitative study employing panel data	Using the publicly available datasets provided by the national organizations, including 1,049 elementary, 545 middle, and 390 high school parents	A pooled OLS regression analysis	Parents (grades 3-9 students) of all public schools and charter schools of Colorado	To investigate the school-level characteristics that result in the largest number of students choosing to opt-out of the test in Colorado	(1) Parents whose children would perform well in the tests tended to participate in the Opt-Out movement. (2) The motivation to join the movement was their opposition to the policy of using high-stakes standardized tests to evaluate teachers. (3) Parents who were highly-informed and had higher levels of cultural capital tend to focus their children's time and energy on more important tests, such as Advanced Placement (AP) tests, and thus encourage their children to quit the state-mandated tests. On the contrary, parents who were low-informed and had lower levels of cultural capital tend to be subordinated to school decisions.
Wenham (2019)	Elementary education in the UK; Standardised Assessment Tests (SATs)	Qualitative research	Semi-structured interviews (N = 3)	Thematic approach	Parents of primary school students, who participated in the collective strike action in May 2016	To explore parents' perceptions of the tests	(1) Parents thought that SATs brought about a negative impact on their children's wellbeing and mental health. (2) Parents felt unsatisfied with the content, structure, and marking ways of the tests, which they thought might stifle children's love for learning. (3) Parents believed that the direct consequence brought about by the tests was trapping the teachers and students in a passive learning environment, in which the curriculum was narrowed, English and mathematics were

Literature	Macro- and Micro-context	Research Type	Data Collection and Sample Size	Data Analysis	Parent Participants	Purpose	Main Findings
Schroeder, Currin, & McCardle (2020a)	The high-stakes standardized testing climate in the US; The high-stakes standardized tests	A critical ethnographic study	Online-questionnaire (N = 208), focus groups and individual interviews (N = 6)	Data analysis spiral	Parents participating in the movement: Largely white, middle-class women	To investigate why parents joined the Opt-Out movement	over-emphasized, as well as the test preparation activities were conducted repetitively. (1) Parents who joined the Opt-Out movements firmly believe that refusing tests could "stop the overuse and misuse of high-stakes tests" (p. 142). (2) Parents thought that high-stakes testing had a negative effect on their children both mentally and physically, and ultimately led to their children's "lack of engagement and joy in learning" (p. 148). (3) Their perceptions of high-stakes testing originated from the observation of their children's behavior before and after the test. However, although parents refused high-stakes tests, they support teachers using multiple assessments to measure students' learning and the assessments should be dominated by teachers because teachers are professionals. (4) Parents desired dialogue with teachers, schools, administrators, and policymakers.
Schroeder, Currin, & McCardle (2020b)	The high-stakes standardized testing climate in the US; The high-stakes standardized tests	Critical digital ethnographic research	Online-questionnaire (N = 208), focus groups and individual interviews (N = 6)	Grounded theory	Parents participating in the movement: Largely white, middle-class women	To hear the voice the Opt-Out Movement members and to examine their voices through a lens of morality	Parents and teachers were experiencing injustice. Their voices were dismissed and even despised, although they are key stakeholders, which resulted in their moral injury.

Table 3. Research on Parent Intervention Programs

Literature	Macro- and micro-context	Participants	Data Collection and Sample Size	Data Analysis	The Intervention Program	Purpose	Main Findings	Effect Sizes
Chrispeels & Rivero (2001)	Elementary education in the US; No specific test	Parents (mostly Latino) who attended the program; were from two elementary schools in a city of California, which were ranked among the lowest-performing in the region.	Prequestionnaire and postquestionnaire (N = 95); Observation; Video-taping of all sessions; In-depth interviews (N = 19); Review of artifacts	Taxonomic analysis; Descriptive statistics; t-test	The <i>Parent Institute for Quality Education</i> (PIQE) program provides information about education policy to parents, especially low-income parents or recent immigrants to the US. Specifically, this program teaches parents the current system of testing, how the educational system is organized and decisions are made, the academic standards and expectations in Arizona, how to check their children's learning progress, and the importance of reading for academic success.	To investigate the effect of the program on "immigrant parents' sense of place in their children's education" (p. 121)	(1) The program raised the parents' awareness of the importance of grades. (2) The program helped parents have a better understanding of the American educational system. (3) After the program, parents initiated more contact with teachers, interacted with their children more positively, adopted more home-based involvement, participated in PIQE and other workshops more actively, and served as advocates	Not reported.

Literature	Macro- and micro-context	Participants	Data Collection and Sample Size	Data Analysis	The Intervention Program	Purpose	Main Findings	Effect Sizes
Ashbaugh (2009)	Elementary education in the US; Pennsylvania System of School Assessment (PSSA)	Fourth, fifth, and sixth-grade students, their parents, and teachers from four elementary schools in a semi-rural community in the city of Pittsburgh	End-of-program surveys completed by parents (N = 72), students, and teachers (N = 30); Weekly parent feedback forms; Students' scaled scores (comparison group: 260 students; study group: 249 students)	Descriptive statistics; Repeated-measures ANOVA; Chi-square test; Multiple regression analysis; Logistic regressions analysis	The PSSA Parent Partnership is a program that involved parents in the preparation of their children for the PSSA and create opportunity for parents, teachers, and students to work together in preparation for the Pennsylvania System of School Assessment (PSSA) in reading and mathematics. The program aims to increase student proficiency on the PSSA in grades four through six.	To investigate the effect of the program on (1) student proficiency on the PSSA and their academic achievement; (2) communication between teachers and parents	more positively. (1) The program increased students' academic achievement and proficiency on the PSSA and facilitated communication between home and school. (2) Parents held positive attitudes towards the program because it helped parents become familiar with the format and expectations of the PSSA, which in turn helped the student and parent prepare for the test. (3) Parents thought the program made them realize the importance of the exam. (4) Parents perceived the program as a good opportunity to work with their children and to know their children's capabilities, strengths, and weaknesses.	Not reported.
Auerbach & Collier (2012)	Elementary education in the US; California Standards Test (CST)	Latino parents (mostly low-income) of elementary students from four schools in Los Angeles; 65% spoke Spanish at home. Their children were low-performance English language learners on CST – reading and writing.	Observations of planning meetings and parent workshops, bilingual parent focus groups, semi-structured interviews with staff, a parent questionnaire, and document review (N = 80)	Constant comparative method; Coding	<i>Families Promoting Success</i> is a parent training program geared to accountability goals, which provides information about standardized testing and teaches parents reading skills, particularly word analysis skills, to improve elementary students' test scores in low-achieving schools.	To investigate (1) the effect of the program on students' academic achievement and family engagement; (2) educators' and parents' perceptions of the program	The program (1) did not promote students' academic achievements. (2) increased parents' involvement at home and in school and their knowledge about reading skills and use of new literacy strategies. (3) made parents more aware of testing and school expectations.	Not reported.
Walker (2016)	The high-stakes standardized testing climate in the US; No specific test	Two parents' cohorts: Cohort 1 included parents who enrolled in and completed the RAD program in Fall 2011; Cohort 2 included parents who enrolled in and completed the RAD program in Spring 2012. All parents were from Phoenix, Arizona, area elementary, middle, and high schools during the 2011–2012 academic year.	Prequestionnaire and postquestionnaire (Cohort 1: N = 1245; Cohort 2: N = 1126); Observation (three elementary school sites in Cohort 1)	Descriptive statistics; Exploratory factor analyses; <i>t</i> -test; Hierarchical regression analyses	<i>Realizing the American Dream</i> (RAD) parent education program aims to enhance Latino parents' involvement behaviors. It teaches parents the fundamentals of American schooling, the importance and strategies for cooperating with schools, and strategies for involving children's education at home. It provides parents with information about standardized testing, such as academic standards and performance requirements.	To investigate (1) the effect of the program on parents' knowledge, belief and behavior; (2) the predicting factors for the changes; (3) whether the program was implemented with fidelity across multiple sites	(1) The program had a significant and positive effect on parents' knowledge, beliefs, and involvement behaviors. (2) Factors predicting the changes after the program included post-program knowledge and beliefs, prior behaviors and beliefs, and family income.	The program had large effect sizes on parents' knowledge (Cohort 1: $d = 1.13$; Cohort 2: $d = 1.29$), modest effect sizes on parents' beliefs (Cohort 1: $d = .20$; Cohort 2: $d = .48$), and moderate effect sizes on parents' involvement behaviors (Cohort 1: $d = .73$; Cohort 2: $d = .72$).

Literature	Macro- and micro-context	Participants	Data Collection and Sample Size	Data Analysis	The Intervention Program	Purpose	Main Findings	Effect Sizes
Araque, Wietstock, Cova, & Zepeda (2017)	Elementary education in the US; State mandated standardized test	Latino parents from two elementary and two intermediate schools in Santa Ana Unified School District of Orange County. The experimental group includes 68 parents who attended the training program and completed the Parent Survey before and after the program. Their children's (N = 164) report cards/grades for two academic years were also collected.	Two parent surveys before and after the program; The experimental group included 68 parents and 164 students, with parent questionnaire s and students' grades collected. At the end of the program, parents' written comments on their learning experience in the program. The control group included 1,628 students whose report cards/grades were also collected.	Quantitative data: Paired samples <i>t</i> -test and ANOVA; Qualitative data: Coding	The <i>Ten Education Commandments for Parents</i> program "teaches parents the fundamentals of the American education system and give parents tools to become more actively engaged in their children's education" (p. 236). This program teaches parents the value and importance of grades, the grade-level learning expectancies set by the Common Core State Standards for K-12 students in mathematics, English language arts, and science, and the graduation requirements in California.	To investigate the effect of the program on (1) parents' knowledge of educational system and testing; (2) parent involvement in children's education; (3) students' academic achievement	(1) The program helped parents better understand the educational system and testing, which resulted in greater PI. (2) Intermediate school students' parents who participated in the program had children who significantly increased from Basic to Proficient levels in math, language arts, and science, whereas parents who did not participate in the program had children who remained at a Basic level in all subjects.	Not reported.

3. Results

The next section presents the results of the analysis, which shows parents' involvement behavior under the context of high-stakes language assessment. The magnitudes of associations between constructs and effect sizes are reported based on Cohen's (1988) benchmark.

3.1 The Answer to RQ 1

RQ1 asks "are parents involved in the assessment process? If yes, how are they involved?" Tables 1 and 2 illustrate the studies investigating parents' involvement in the assessment process. All of the 20 studies provided empirical evidence for parents involved in testing, indicating that parents do involve in the high-stakes language assessment process and they are involved in two ways: general and extreme involvement behavior.

3.1.1 Parents' General Involvement Behavior: Parent Involvement in Assessment at Home

As shown in Table 1, the PI behavior under the context of high-stakes language assessment reported in the literature largely overlaps with the PI behavior identified in general parental involvement literature. For example, encouragement (e.g., Eizadirad, 2020; Martínez et al., 2004), communication (Eizadirad, 2020; Holyk, 2011; Martínez et al., 2004), providing learning conditions at home, and controlling children's amusement time (Dawadi, 2019, 2020), and helping with homework (Barksdale-Ladd & Thomas, 2000; Dawadi, 2019, 2020; Holyk, 2011; Martínez et al., 2004).

Except for these general PI practices, some studies reported strategies parents specifically employed to help children prepare for the test. Namely, without a test, parents might not take these strategies, which thus can be named parent involvement in test preparation (PI_TP). A range of PI_TP strategies are identified in the existing literature:

- Purchasing test-related materials, such as examination guidance books (Barksdale-Ladd & Thomas, 2000);

- Sending children to cram schools or hiring tutors (Dawadi, 2019, 2020; Ferman, 2004; Martínez et al., 2004);
- Teaching children test-taking strategies and sharing the test-taking experience with children (Dawadi, 2019, 2020);
- Urging children to learn for the test (Dawadi, 2019, 2020; Ferman, 2004);
- Cooperating with neighbors and relatives to support children's test preparation (Dawadi, 2019, 2020);
- Helping children analyze the reason why they did not succeed in the test (Martínez et al., 2004);
- Familiarizing children with test questions through doing practice questions (Eizadirad, 2020).

In addition, research shows that not all parents involve in children's test preparation. Barksdale-Ladd and Thomas (2000) reported that some parents in the north state were involved in children's test preparation such as purchasing test-related materials, while other parents in the north state and all parents in the southern state did not involve in children's test preparation and they only took general PI strategies such as helping children with homework.

Further, the literature indicates that although parents prefer to involve in the assessment process by supporting their children at home (Desforges et al., 1994), researchers want more from parents. For example, Wolfendale (1998) highlighted the importance of involving parents in the assessment process and used the term "joint assessment" (p. 355) in an attempt to invite parents to be more involved in the assessment process. Fredericks and Rasinski (1990) fully described the principles and practice of involving parents in the reading assessment process and illustrated two assessment tools that were successfully used in an American elementary school. Rutland and Hall (2013) proposed that parents should be not only the information consumers and informants, but also be "a collaborative member of the assessment team" (p. 8) to identify "strategies and approaches for assessment that will work best for their child" (p. 8). However, these researchers mainly focused on the assessment designed for early childhood and elementary students. Additionally, there is a lack of empirical data to prove the feasibility and effectiveness of joint assessment projects.

3.1.2 Parents' Extreme Involvement Behavior

In some countries that administered high-stakes accountability systems, standardized testing aroused strong opposition. Parents adopted extreme behavior to express their resistance to high-stakes standardized testing, which was described as an unwelcomed PI strategy by schools (Schroeder, Currin, & McCardle, 2020a).

Some parents united to boycott high-stakes testing, and the Opt-Out movement in the US is a typical example. Since the administration of the No Child Left Behind Act, the US has stepped into an era of accountability via high-stakes standardized testing (Schroeder et al., 2016). The excessive power of high-stakes testing aroused public resistance, anger, and despair (Schroeder et al., 2016). Such background triggered "a grassroots coalition of opposition to high-stakes tests that are used to sort students, evaluate teachers, and rank schools" (Paladino, 2020, p. 14), and parents were leaders or main participants of the Opt-Out movement.

Most studies in Table 2 mainly explored the reason why parents participated in the Opt-Out movement. The findings of these studies indicated that the main reason for parents' opposition to high-stakes tests was that the high-stakes accountability system was not conducive to students' educational development (e.g., Abraham, Wassell, Luet, & Vitalone-Racarro, 2018), which might harm children's physical and mental health, as well as students' learning (e.g., Schroeder et al., 2016, 2020a). In addition, parents argued that the high-stakes testing accountability system was "government overreach" (Schroeder et al., 2016, p. 8), which was unfair for both teachers and students (e.g., Pizmony-Levy & Saraisky 2016; Schroeder et al., 2016, 2020a).

3.2 The Answer to RQ 2

RQ2 is about the effect and the effect size of parents' involvement behavior in the assessment process for promoting students' academic achievement. No direct evidence was identified to answer this question. However, the literature in Table 3 provided implicit evidence for the effectiveness of PI in language assessment. Many intervention programs offered a series of sessions to help parents familiarize themselves with tests and teach them how to support their children's test preparation. In Araque et al.'s (2017) and Ashbaugh's (2009) research, the intervention programs successfully improved PI_TP, which in turn promoted child academic achievements. On the other hand, according to Auerbach and Collier (2012), although the program increased PI_TP, children's academic attainments were not advanced. Moreover, Dawadi (2019) also provided indirect evidence that although parents tried their best to support their children's test preparation, children did not perform well on the

test. These conflicting findings suggest that consensus has not been reached about the effectiveness of PI in the language assessment process.

3.3 The Answer to RQ 3

RQ3 asks “what factors affect parents’ involvement behavior in the assessment process?” Only one study provides direct evidence to answer this question. Cheng et al.’s (2010) research showed that parents’ perceptions of test quality, test knowledge, and opportunities to know about tests contributed significantly to PI_TP ($R^2 = .314$, large effect size). Parents’ perceptions of test impact on students’ learning motivation also made a significant contribution to PI_TP ($R^2 = .185$, moderate effect size). Further, parents’ levels of education and the time they spent with their children also had a positive effect on PI_TP ($R^2 = .116$, small effect size).

Besides, this question can also be answered through indirect evidence. For example, the studies on the Opt-Out movement (see Table 2) indicated that parents’ negative viewpoints about high-stakes assessment might impact their behavior. Martínez et al. (2004) also reported that parents’ knowledge about assessment and their levels of education might affect their involvement, but they did not report the effect sizes.

4. Discussion

The next section firstly discusses the answers to research questions. Then, it proposes issues that deserve further investigation. Finally, the test impact on parents’ behavior is delineated.

4.1 Can the Existing Literature Fully Answer the Research Questions

RQ 1 was fully answered. Even though parents know little about language and assessment-related information, parents are still involved in the high-stakes language assessment process (Dawadi, 2019), and the ways of involvement include general and extreme involvement. Typically, extreme involvement strategies can only be found in a few countries implementing high-stakes testing accountability systems. It might thus be concluded that the most frequently adopted PI strategies under the context of high-stakes language assessment include general PI and PI_TP strategies.

RQ 2 was not fully answered. Most studies merely described what parents did under the context of high-stakes language assessment, while few researchers specifically examined the effectiveness of PI_TP practice. Although some studies provided indirect evidence indicating the effectiveness of PI_TP behavior, their findings were contradictory. Additionally, scarcely did researchers report the effect sizes, meaning that little is known about the magnitude and importance of the effect of PI_TP strategies.

RQ 3 was also not fully answered. Although a few potential factors were identified, direct evidence was only garnered from Cheng et al.’s (2010) research, and most of the evidence was indirect that calls for further investigation.

4.2 Suggestions for Future Research

Based on the answers to research questions, this paper proposed the following issues that deserve further investigation.

- How should parents get involved in the language assessment process? Is it necessary to invite parents to engage in the assessment process through intervention programs?
- What is the conceptualization of PI_TP? What is the definition of PI_TP? Can PI_TP be just taken as a dimension of PI?
- What are the specific strategies of PI_TP under various educational backgrounds? Will the effect or frequency of these strategies change with other factors such as time or grade?
- What factors affect PI_TP? The existing studies implied that parents’ perceptions of testing might affect PI_TP, and parents’ perceptions of testing might consist of several dimensions. Thus, which dimension affects PI_TP? What is the nature and extent of the effect? Are there mediating factors in the process of parents’ perceptions of testing affecting PI_TP behavior? Does this process get moderated by other factors?
- What is the effectiveness of PI_TP? Does PI_TP promote students’ academic achievement or other aspects of learning? If yes, what about the effect size? Among various PI_TP strategies, which is most effective?

4.3 Test Impact on Parents' Behavior

Taken together, there are three features concerning the impact of high-stakes language assessments on parents' behavior:

- High-stakes language assessments might influence the ways parents are involved in children's learning. Specifically, parents tend to adopt various PI_TP strategies. For example, sending children to cram schools or hiring tutors is a strategy that parents most frequently used in the test preparation period (Dawadi, 2019, 2020). In order to help children prepare for tests, parents will learn test-related knowledge through various channels, such as communicating with teachers (Holyk, 2011) or attending parent intervention programs.
- High-stakes language assessments might have a positive impact on some parents but a negative impact on others. Evidence shows that when a test provides accurate information that parents need, it will encourage more active parental involvement in children's test preparation (Vandergrift, 2015). On the other hand, tests may make parents feel extremely anxious, which in turn drives them to adopt inappropriate PI_TP strategies such as forcing their children to stay up late to prepare for tests at the cost of reducing their sleep time (Dawadi, 2019, 2020).
- High-stakes language assessments might influence some parents, but not others. For instance, in Desforges et al.'s (1994) research, some parents were engaged in test preparation, while others were not.

5. Conclusion

The present study has several limitations. Firstly, due to the limited number of empirical studies regarding the impact of high-stakes language assessments on parents' behavior, it did not consider the standard of peer review when screening literature, which may weaken the reliability of this study. Additionally, there is a shortage of longitudinal research, making it difficult to describe the dynamic process of the impact of high-stakes language assessments on parents' behavior. Furthermore, a few studies (e.g., Ferman, 2004) did not collect data directly from parents, rather, they gather data from other test stakeholders such as teachers and students, which might also weaken the reliability of this study. Finally, a lack of quantitative data makes it difficult to statistically describe and synthesize study outcomes.

Despite these limitations, this meta-analysis makes several contributions to test impact research. Firstly, it might be the first systematic synthesis that reveals test impact on parent behavior. Through analyzing the findings of extant literature, it identifies both direct and indirect evidence to expound whether and how parents are involved in the assessment process, the factors affecting PI in the language assessment process, and the effectiveness of such involvement. Moreover, it summarizes test impact on parents' behavior, while most of the previous research merely focused on test impact on parents' perceptions.

This research synthesis has practical implications. Firstly, it highlights the importance of exploring the impact of high-stakes language assessment on parents' involvement behavior and proposes several issues for future research. Secondly, it suggests that parents want to be involved in children's test preparation, but they do not know how to do it (Ashbaugh, 2009) so that it might be helpful to provide colorful intervention programs and materials that meet their needs.

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Note

Note 1. Test and assessment are used interchangeably in this paper.

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