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RESEARCH

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Relationships Among Parental Self-Efficacy, Home Learning Activities, and Child Skills

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Abstract

Objective: To investigate relationships among parental self-efficacy, home learning activities, and children's socio-emotional and language skills for preschool children.

Background: Higher parental self-efficacy is often related to better child skills and with more home learning activities. However, the relationships between parental self-efficacy, home learning activities, and children's skills have not yet been investigated.

Method: The path models draw on data from 727 parents of preschool children (full sample: 85.1% female, 50.9% employed, 24.8% non-German family language) and a subsample of 108 parents of preschool children who soon transition to elementary school in Germany. The self-report data come from the German evaluation study "Language Daycare Centers."

Results: We found significant positive links among (a) general parental self-efficacy with home learning activities and children's language skills, (b) language supporting parental self-efficacy with home learning activities and children's socioemotional skills, and (c) a negative link between language supporting parental self-efficacy and children's socioemotional problems.

Conclusion: The more self-efficacious parents felt, the more often they offered home learning activities and the higher they rated their children's language skills at age 5 years.

Implication: The findings highlight the importance of parental self-efficacy for engaging with children and the positive parental assessment of children's skills. Promoting

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parental self-efficacy might stimulate home learning activities and improve the home learning environment.

KEYWORDS
beliefs, child skills, home environment, preschool, self-efficacy

Language and socioemotional competencies are basic competencies that are formed early and are important for children's academic and mental health (Duncan et al., 2007; Durlak et al., 2015). The family plays a significant role in influencing children's socioemotional and language skills: on the one hand, through the family climate (e.g., a warm and supportive atmosphere within the family); on the other hand, through specific parent–child learning activities at home (e.g., shared book reading, telling stories; Baker, 2013; Foster et al., 2005). There is evidence that those home learning activities are positively related to children's socioemotional and language skills (Niklas & Schneider, 2017; Skwarchuk et al., 2014), although there are only a few studies on the relationship between home-based learning activities and socioemotional skills (Baker, 2013). However, these few studies point to a positive link between both variables (Rose et al., 2018). An essential parental precursor for home learning activities and child skills is parental self-efficacy, which is the parent's belief in their ability to influence their child and its environment in a way that promotes child development (Ardelt & Eccles, 2001; Peacock-Chambers et al., 2017). Previous findings show that parental self-efficacy is a beneficial predictor for both children's well-being and social skills as well as language skills (Jones & Prinz, 2005; Junttila et al., 2007). However, the relationships among parental self-efficacy, home learning activities, and preschool children's socioemotional and language skills have not yet been investigated (Stiévenart & Martinez Perez, 2021).

The present study investigated three dimensions of parental self-efficacy: (a) parents' general perception of their parenting, (b) parental self-efficacy in supporting children's language skills, and (c) parental self-efficacy in supporting children's transition from preschool to elementary school. The relationship of these dimensions to home learning activities and children's socioemotional and language skills was investigated.

Both socioemotional and early language skills are essential for children's school readiness and later reading literacy in elementary school (Denham, 2006; Lehrl et al., 2013). Children's successful transition to elementary school is linked to stable friendships and later school success (Duncan et al., 2007). However, the transition from preschool to elementary school (in Germany at age 6 years) is often perceived as a critical phase in children's educational careers. The involvement of parents is a significant factor during this phase because their attitudes toward school and learning influence their children's adaptation to elementary school (Faust et al., 2012). In some studies, family factors were already examined (e.g., a higher educational level) as predictors of a successful transition reported by the parents (Dockett & Perry, 1999; Kluczniok et al., 2015). Moreover, parents who engaged in more home learning activities perceived their children as better socially prepared to enter elementary school (e.g., settling into a new peer group in class). As another family factor, higher parental self-efficacy is related to children's better adjustment in elementary school (Giallo et al., 2008). High parental self-efficacy is also associated with more home learning activities (Peacock-Chambers et al., 2017). However, there is little research on parental self-efficacy that focuses on the transition to elementary school (Giallo et al., 2008) and its relationships to home learning activities and children's socioemotional and language competencies. The home learning environment model provides a suitable framework for the relations among the aforementioned variables (Kluczniok et al., 2013; Tietze et al., 2005; see Figure 1). We mapped this model with families' background characteristics as control variables, parental self-efficacy as a parent's belief, and home learning activities as processes that influence children's socioemotional and language skills.

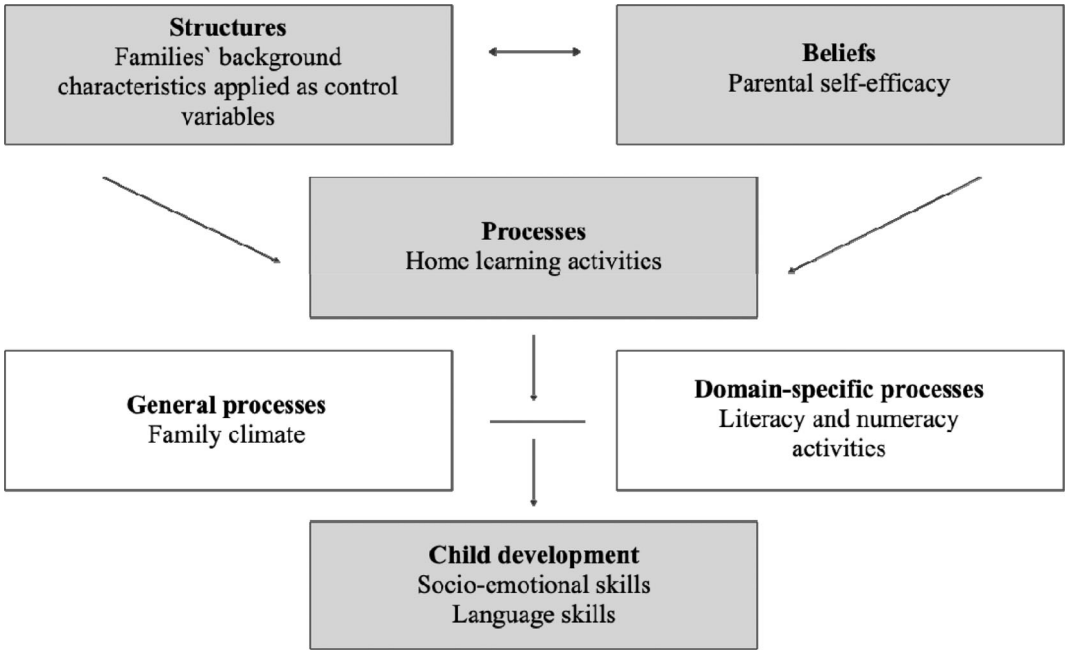

FIGURE 1 Model of the home learning environment with the variables used in this study. *Note*. Model is adapted from Tietze et al. (1998) and Kluczniok et al. (2013).

HOME LEARNING ENVIRONMENT MODEL

Children's interactions with their immediate environment, called proximal processes, are the driving force of child development (Bronfenbrenner & Morris, 2006). For children, the family is the primary and presumably most important socialization environment (Lehrl, 2018; Tietze et al., 2005). For instance, parent–child home learning activities are essential for children's school performance (Crane, 1996; Sammons et al., 2015) and their socioemotional skills (Raver, 2002). The home learning environment model, which has been adopted by several authors, is characterized by its distribution into three main components: structural family characteristics, beliefs, and processes (Kluczniok et al., 2013; Tietze et al., 2005). Thereby, structural characteristics and beliefs mutually influence each other, and both affect processes that, in turn, affect children's development.

Structural characteristics are rather stable, long-term family characteristics, such as the parent's educational level or immigration background. Beliefs refer to the parent's values and attitudes towards parenting, education, and their children's development, e.g., parental self-efficacy. Processes are characterized by either general aspects of parent–child interactions (e.g., a parent supports a child) or domain-specific activities (e.g., reciting the alphabet; Lehrl, 2018) and directly influence child development (e.g., children's socioemotional skills). Specifically, children who are more likely to (a) experience interparental conflicts, (b) have parents who do not support children in dealing with their feelings, and (c) have parents who engage in fewer home learning activities show fewer social skills and more emotional difficulties (Denham et al., 2000; Eisenberg & Fabes, 1994; Niklas & Schneider, 2017). Parent–child activities at home, such as preparing a meal together with the child, can have a positive influence on children's language skills (Niklas & Schneider, 2015). Socioemotional and language skills seem to be intertwined. For example, Petersen et al. (2013) found among elementary school children that even after controlling for earlier behavioral problems, language ability predicted children's

later behavioral problems. There is substantial evidence of the importance of socioemotional and language skills for academic achievement and mental health in childhood and adolescence (Duncan et al., 2007; Durlak et al., 2015; Malti & Noam, 2016).

Parental self-efficacy and home learning activities

Parental self-efficacy is a belief that influences parent–child interactions and parent involvement in learning activities and therefore affects child development (Bojczyk et al., 2018; Peacock-Chambers et al., 2017). According to Bandura et al. (1996), the more relevant the self-efficacy measures are for the respective tasks, the higher the links between self-efficacy measures and activities. Parental self-efficacy can be understood in two ways: It can be the general sense parents have of their effectiveness in their parenting role (Gärtner et al., 2018) or it can relate to specific parenting tasks, such as encouraging healthy eating (Bohman et al., 2016). Task-specific parental self-efficacy could also be associated with a child's skill that matches the parenting task, although talking about a fight with a friend might also improve a child's vocabulary. However, researchers use both task- and domain-specific parental self-efficacy and general parental self-efficacy (Wittkowski et al., 2017). Parents with higher educational levels and income and also nonimmigrant parents report having higher self-efficacy than parents with a low educational level, low income, or immigration background (Ardelt & Eccles, 2001; Boruszak-Kiziukiewicz & Kmita, 2020; Peacock-Chambers et al., 2017). A study by Elder et al. (1995) specifically found that economic difficulties led to pressure on parents, causing emotional stress and depressive feelings. This negatively affected parents' self-efficacy. More recent studies have found an inverse relationship between parental self-efficacy and parental stress, thereby substantiating this link (for an overview, Albanese et al., 2019). On the basis of two studies, parental self-efficacy is related to both literacy and numeracy activities that promote the transition to school (e.g., teaching letters, reading to child) and family practices (e.g., talking about the relationship of family members; Bojczyk et al., 2018; Machida et al., 2002). Although some studies have investigated the positive relationship between home activities and parental self-efficacy (Bojczyk et al., 2018), these studies rarely relate to the preschool age range (Peacock-Chambers et al., 2017).

Parental self-efficacy and children's socioemotional and language skills

Parental self-efficacy is often associated with different aspects of child skills, with higher parental self-efficacy generally indicating more favorable child skills (Liu & Leighton, 2021; McDonald et al., 2016). Research synthesis has indicated that parental self-efficacy as a precursor influences parenting behavior: Parents who feel more efficacious are more likely to use supportive strategies that promote children's cognitive, behavioral, and socioemotional skills (Jones & Prinz, 2005; Stiévenart & Martinez Perez, 2021). If a parent perceives their parenting skills as inadequate, this can result in psychological inaccessibility, which influences their behavior and thus also the child (Coleman & Karraker, 1997; Glatz & Trifan, 2019). Thus, it affects the degree of well-being and stimulation children experience in their homes and impacts their emotional and cognitive development (Bornstein et al., 2018; Coleman & Karraker, 1997). Also, some studies suggest a positive relationship between high parental self-efficacy and children's language skills (for an overview, Stiévenart & Martinez Perez, 2021), although some studies have found no direct link between the two variables (Dulay et al., 2018). Interestingly, another study showed that children's social skills mediated the relationship between parental self-efficacy and elementary children's reading and numeracy skills (Junttila et al., 2007), indicating the importance of social skills for academic achievement. However, high parental self-

efficacy can serve as a protective buffer for children's socioemotional skills and well-being (McDonald et al., 2016; Morelli et al., 2020).

Home learning activities and children's socioemotional and language skills

Many studies have found that parent–child literacy activities, such as shared book reading, influence children's literacy skills (e.g., Burgess et al. 2002; Niklas & Schneider, 2017) and their later reading skills in primary school (Lehrl et al., 2013). Rose et al. (2018) found in a longitudinal study that the quality and quantity of home literacy activities with 3-year-old children were linked to their language skills when they were 5 years old, which in turn predicted emotional self-regulatory skills when the children were 8 years old. Considerable research has been conducted to explore associations between parent–child activities and children's emergent literacy and numeracy skills (e.g., Sénéchal & Lefevre, 2002; Skwarchuk et al., 2014). For instance, Niklas and Schneider (2017) found that parent–child activities focused on literacy predicted both the emerging reading skills of children in preschool and reading and spelling at the end of elementary school.

Shared activities with parents provide an example of how to interact with other people and the environment. This way, the family climate (e.g., warmth) and home learning activities (e.g., shared book reading, singing songs) could help children improve their socioemotional and language skills (Rose et al., 2018). However, Baker (2013) stated that few studies investigated how children's socioemotional skills are influenced by parental involvement in home literacy activities. For example, Gershoff et al. (2007) found a positive relationship between mothers' involvement in home literacy activities and their children's social competence and interpersonal skills in kindergarten. However, to the best of the authors' knowledge, the relationships between parental self-efficacy, home learning activities, and preschool children's socioemotional and language skills have not yet been investigated (Stiévenart & Martinez Perez, 2021).

TRANSITION TO ELEMENTARY SCHOOL

The framework of the transition approach is one concept regarding transitional phases, for example, when children transition from preschool to primary school (Griebel & Niesel, 2011; Yeboah, 2002). This theoretical approach states that the transition from preschool to elementary school is perceived as a vulnerable time both for parents and children (Griebel & Niesel, 2011; Yeboah, 2002). It considers changes from the perspective of critical life events (Filipp, 1995), which can be both burdens and developmental challenges (Griebel & Niesel, 2011). However, the results of several studies indicate that only a small proportion of children have problems during the transition from preschool to elementary school (Faust et al., 2012; Kluczniok et al., 2015). The high stress load during the transition might be overemphasized by the transition approach.

Nevertheless, starting school initiates a key transitional period for children, a transition through which parents need to navigate and support their children. Due to the structural and local separation between preschool and elementary school in Germany, for example, there are specific activities for preschool children in the year before the transition, including visiting the future elementary school. Parents might also take part in certain activities with their children (e.g., teaching the child to write their name or practicing how to get to school). Research shows that parents who engaged in more home learning activities with their children also perceived their children to be socially better prepared for entering elementary school (Kluczniok, 2015). However, few studies examined family factors as predictors of a successful transition but instead focused on children's cognitive and socioemotional skills, with family factors serving as control variables (e.g., Romano et al., 2010).

Other factors for parents' coping with the transition are the perceived support by the school, the parental level of information, and the parent's well-being (Wildgruber et al., 2017). Parental beliefs, such as parental self-efficacy, play an essential role in parental behavior (Glatz & Trifan, 2019). Thus, Giallo et al. (2010) showed that higher parental self-efficacy was related to greater parental involvement throughout children's first term at elementary school. However, there is little research on parental self-efficacy in managing the transition to elementary school, especially concerning child skills (Giallo et al., 2008). That is why we want to investigate how parental self-efficacy in children's transition from preschool to elementary school is related to home learning activities and children's socioemotional and language skills.

CURRENT STUDY

To the best of the authors' knowledge, there are no studies on the relationships among (task-specific) parental self-efficacy, home learning activities, and children's socioemotional and language skills. Additionally, there are only a few studies about how parental self-efficacy influences children's transition from preschool to elementary school (Giallo et al., 2008, 2010; Pelletier & Brent, 2002). Our study responds to this gap and focuses on the overarching research question: How is parental self-efficacy related to home learning activities and children's socioemotional and language skills? In more detail, we analyzed the following: (a) How are general parental self-efficacy and parental self-efficacy on language support related to home learning activities and children's socioemotional and language skills? (b) How does parental self-efficacy in facilitating the transition to elementary school and in language support relate to home learning activities and the socioemotional and language skills of children?

Regarding research question, (a) we assumed that parental self-efficacy in supporting children's language skills is related to school-related home learning activities and children's language skills. We further assumed that general parental self-efficacy is related to both activities and child skills. Furthermore, it is possible that by focusing on supporting a child's language skills, parents communicate with their child more often or better, which improves the quality of the parent–child relationship and could contribute to the family climate. Therefore, paths among all measures of self-efficacy, home learning activities, and child skills were enabled in the models. Similarly, we assumed in the research question (b) that parental self-efficacy in supporting children's language skills is related to school-related activities and children's language skills. Parents who feel efficacious in supporting their child in the transition to elementary school might want to strengthen their child's language and emotional skills.

METHODS

This study abided by the American Psychological Association ethical guidelines on conducting studies with human participants. Parents gave written informed consent. Participants were informed that they could stop the survey at any time without consequences. The study was reviewed by the Ethics Committee of the University of Bamberg, Germany, and approval was granted (no. 2022–03/11).

Data and participants

This study is based on data from 727 parents of children who attended 162 public preschools in Germany. In the German early education and care system, children attend preschool until age

6 years and then move on to elementary school. On average, 4.49 ($SD = 1.64$) families per preschool took part in the survey. Data collection took place from September 2019 to February 2020 within the German federal program "Language Daycare Centers Evaluation Study: Because Language Is the Key to the World" (Anders et al., 2020) using an online questionnaire.

This federal program, established by the German Federal Ministry for Family Affairs, Senior Citizens, Women and Youth, was implemented from 2016 to 2022 in approximately 7,000 preschools aiming to support them by focusing on three main areas: language education that is embedded into daily routines, inclusive pedagogy, and cooperation with families. To qualify for the program, preschools need to be situated in socioeconomically disadvantaged areas, often serving a significant number of children who speak non-German languages at home or who come from economically at-risk families. The program provides one additional preschool teacher for each daycare center. The additional preschool teachers are guided by an external consultant. Approximately every eighth daycare center in Germany is a language daycare center. More than 500,000 children and their families benefit from this program. The evaluation accompanying the program examines how it is implemented by the participants and what effects arise in the process. The evaluation accompanying the program is longitudinal, using standardized surveys and observations at two measurement points. It is carried out in nine of Germany's 16 federal states.

The present study is based on the evaluation data, yet the measures employed, although part of the evaluation framework, are distinct and not a primary focus of the evaluation itself. The preschools' selection process was initially characterized by which preschools have participated in previous observational studies and team surveys in the context of the evaluation program. Because of a low response rate, additional preschools in the evaluation study were contacted where no previous observations and team surveys had been conducted. For ethical reasons, participation in the study was completely voluntary. Data were included only for parents who had signed an informed consent form complying with the current European and German data protection guidelines that the parents signed before starting the questionnaire. Participating families received a small incentive (a voucher for toys).

For this study, we also used a subsample of 108 parents from a total sample of 727 parents. Children of those parents started elementary school in the same year: parents answered additional questions on their parental self-efficacy during the transition from preschool to elementary school. Of participating parents, 85.1% were mothers. Parent's mean age was 36.83 years ($SD = 6.60$), ranging between 19.12 and 62.5 years. Two participants were foster mothers and four were grandmothers, one of whom was also a foster mother. Because these participants took on a parental role for the children, they are also referred to as parents in this article. The children's mean age was 5.3 years ($SD = 0.88$ years). The mean age of the children who went to elementary school in the same year was 6.5 years ($SD = 6.48$ months). The participating parents had two children on average ($SD = 0.95$). Approximately half of the parents were employed (50.9%). Of the parents, 59.3% passed the Abitur (advanced-level qualifications necessary for entering university in Germany, similar to the international Baccalaureate or U.S. Advanced Placement tests), and the median net equivalent household income was 1,666.67 Euro ($SD = 740.42$ Euro). Net equivalent income was derived from the categories of monthly income. It should be noted that the highest income category was open at the highest level. The net equivalent income calculation was set at 6,500 Euros, which cannot cover all higher incomes and might slightly decrease the calculated net equivalent income. The nationwide median net equivalent income in 2019 was 1,959.58 Euro. Of the participating parents, 24.8% stated that they speak at least an equal proportion of a language other than German at home.

Measures

Parental self-efficacy

All parental self-efficacy measures were 5-point Likert-scales. The response options ranged from *fully disagree* (1) to *fully agree* (5). The items for general parental self-efficacy are based on Kliem et al. (2014) and Johnston and Mash (1989). The items were translated when necessary and simplified for better readability. In addition, slight changes were made so that "I think I can …" became "I am sure I can …" to emphasize further the perceived efficaciousness (Bandura, 2006). Our measure consisted of five items (full sample: Cronbach's $\alpha = .81$; subsample: Cronbach's $\alpha = .82$). One item example is "I am sure that I can do everything a mother or father should be able to do." The measure for parental self-efficacy on the transition from preschool to elementary school was based on Giallo et al. (2008). We surveyed parents whose children transitioned to elementary school in 2019. This measure consists of six items (subsample: Cronbach's $\alpha = .90$). One item example is "I am sure that I support my child well in the transition to elementary school." The measure for parental self-efficacy in supporting children's language skills is based on measures of DesJardin (2003) and Coleman and Karraker (2003). DesJardin's (2003) instrument relates to parental self-efficacy in supporting the language development of children with hearing loss, which is a special target group. Because the item wording still covers language development in terms of content, the Self-Efficacy for Parenting Tasks Index—Toddler Scale (Coleman & Karraker, 2003) was used to adapt the items, and they were additionally translated into German. Our measure consists of five items (full sample: Cronbach's $\alpha = .89$; subsample: Cronbach's $\alpha = .90$). One item example is "It is easy for me to support the language development of my child daily."

Frequency of home learning activities

Parents were asked how often they engage in home learning activities with their children, ranging between *never* (0) and *several times a day* (8). The items are based on works by Anders et al. (2015) and Melhuish et al. (2008). Theoretically guided, we developed subscales on promoting the family climate and school-related activities that may help children in their transition to elementary school. The measure for school-related activities consists of nine items focusing on literacy and numeracy activities (full sample: Cronbach's $\alpha = .80$, subsample: Cronbach's $\alpha = .82$). One example item is "enable numerous contacts with letters and writing in everyday life." The measure for the family climate consists of four items (full sample: Cronbach's $\alpha = .66$; subsample Cronbach's $\alpha = .72$). This measure aims to reflect everyday interactions in the family, such as talking about the day or doing household activities together with the child. Item examples are "Talk to your child about conflicts or problems, e.g., when there is a conflict; ask open-ended questions to which the child cannot answer yes or no; doing household activities together with your child; during shared meals, for example, talking about experiences."

Children's skills

Using the Strengths and Difficulties Questionnaire (SDQ; Goodman, 1997), parents were asked to report on their children's socioemotional competencies on a 3-point Likert scale, choosing between the options *not true*, *somewhat true*, or *certainly true*. For the following models, we used a measure with 15 items that comprise children's emotional problems, conduct problems, and problems with peers (full sample Cronbach's $\alpha = .69$; subsample Cronbach's $\alpha = .70$). The subscale of hyperactivity did not fit into the context of the present study, which focuses

exclusively on children's socioemotional behaviors. One item example of children's emotional problems is "has many fears, easily afraid."

To assess children's language skills, we asked parents to rate their children's vocabulary and language skills for their age. We used a 5-point Likert scale with response options ranging from *does not apply at all* to *applies entirely*. Items that were already used in the longitudinal BiKS study were proven reliable (Weinert et al., 2013). The instrument originally had six items. We decided not to use three items for the measure applied in this study because they focus on the written language area, which is not in line with our measure of parental self-efficacy in supporting children's language skills. Thus, our measure consists of three items (full sample Cronbach's $\alpha = .88$; subsample Cronbach's $\alpha = .88$). Item examples are "My child has a very large vocabulary considering his or her age; can express himself/herself very well for his/her age and already uses comparatively complex sentences; forms grammatically correct sentences."

Background characteristics

In addition to child characteristics, we controlled for the socioeconomic background of families as a known influencing variable. To assess income, parents were asked to group themselves into categories of net income ranges (e.g., 1,000 to less than 1,500 Euro). With this information, we estimated the net equivalent income. To assess parents' educational school level, we differentiated between parents with no secondary certificate, a lower secondary certificate, a higher secondary certificate, and a degree qualifying students to attend university (term *Abitur* in Germany). Parents were asked about their family language spoken at home (0 = *mostly German*, 1 = *at least in equal parts a language other than German*).

Procedure

Heads of the selected preschools received letters providing information on the survey and were asked to give the letters to parents. Each letter had a code generated for one family, which created a pseudonym. The code allowed the parents to fill out the questionnaire anonymously. Two support options were given to reach parents with different language backgrounds and parents with difficulties in reading and writing: (a) The questionnaire was available in six languages (German, Turkish, Russian, Arabic, English, and Spanish) and (b) multilingual interviewers with different cultural background were available in person or via telephone to help the parents to navigate the questionnaire.

Statistical analyses

Before performing the analyses, data were checked for normality, missing data, and outliers. Because variables were not normally distributed, we used the maximum likelihood estimation with robust standard errors because it is robust against a breach of the normality assumption (Kline, 2011). The percentage of missing data for the variables was between 0.6 and 17.4%. We used full information maximum likelihood, which has proven to be an unbiased parameter estimate in studies, even with a higher percentage of missing data (Enders, 2001). We calculated the p values of the Mahalanobis distance for multiple outlier analyses, which indicated that we had to remove 11 cases. Due to considerable variance between the groups (intraclass correlation coefficients ranged between .031 for SDQ up to .075 for parental self-efficacy in supporting the transition to elementary school), we used type = complex to control the difference.

To answer both research questions, we conducted path analyses to test the relations among parental self-efficacy measures, frequency of home learning activities, and children's skills using the home learning environment model. We added a direct path between parental self-efficacy and children's skills to test the direct link between these two variables. To answer the first research question, we used a path model with the full sample. To answer the second question, we used a path model with the subsample of 108 parents whose children were about to enter elementary school. All path models were performed with Mplus (Version 7.4). SPSS was used for descriptive analyses (Version 25.0, IBM SPSS Statistics for Windows, 2017).

RESULTS

Descriptive results

We found no differences by parent or child gender or parent employment regarding parental self-efficacy, frequency of home learning activities, or children's skills. With regard to parental educational level, some significant differences emerged: The higher the educational level, the more self-efficacious parents felt in supporting their child's oral language skills and the more they engaged in parent–child activities both in school-related activities and activities that support the family climate. However, the lower the parental education level was, the lower they rated their child's socioemotional competencies.

In the first step, we compared the subsample of families with children at the end of preschool ($n = 108$) who were about to transition to elementary school and the subsample of families with children during preschool ($n = 619$) for significant differences in our parental self-efficacy measures, frequency of home learning activities, and children's skills (see Table 1). We found no significant differences between both parent groups, indicating that parents whose children are at the end of preschool do not significantly undertake more school-preparatory frequency of home learning activities than parents with preschool children.

Furthermore, we checked our measures for correlative interrelations (see Table 2 in the supplemental material). The results indicate relationships between parental self-efficacy and the frequency of home learning activities. Furthermore, the SDQ is negatively linked to two parental self-efficacy measures. This suggests that parents with lower self-efficacy in supporting

TABLE 1 Differences between dependent and independent variables between families with children at the end of preschool ($n = 108$) and families with children during preschool ($n = 619$).

Variable	Group 1 ($n = 108$)		Group 2 ($n = 619$)					
	MI%	*SD*	*MI*%	*SD*	*F*	β	OR	*p*
Net equivalent income	1,656.10	750.25	1,739.65	738.61	1.00			.32
Family language mostly German	25.2		24.7			.03	1.03	.90
Parent's educational level[a]	3.44	0.74	3.47	0.74	0.08			.79
SDQ overall problem behavior	1.05	0.29	1.03	0.19	0.66			.42
Children's language skills	4.12	0.81	4.00	0.86	1.80			.18
PSE general	4.03	0.62	4.00	0.60	0.33			.57
PSE language support	4.40	0.66	4.27	0.67	3.42			.07
HLA family climate	6.44	0.97	6.41	0.94	.010			.76
HLA school preparatory activities	5.57	1.01	5.37	1.06	3.00			.08

Note: HLA = home learning activities; OR = odds ratio; PSE = parental self-efficacy; SDQ = Strength and Difficulties Questionnaire.
[a]1 = no high school diploma, 2 = lower higher secondary certificate, 3 = higher secondary certificate, 4 = Abitur (qualification for university).

their children's oral language skills and supporting their children's transition to elementary school reported more child socioemotional problems.

General and language-specific parental self-efficacy: Links to home learning and child skills

Using a path model with the full sample, we tested the relationship among parental self-efficacy measures, frequency of home learning activities, and children's skills (Figure 2). The model had a perfect fit because it was saturated. It was controlled for children's age and sex, family language, net equivalent income, and parents' educational level. General parental self-efficacy was significantly related to the frequency of home learning activities that help prepare for school ($\beta = .14$, $SE = .05$, $p = .005$) and to children's oral language skills ($\beta = .11$, $SE = .05$, $p = .021$). Parental self-efficacy in supporting children's oral language skills was significantly related to the frequency of home learning activities that foster the family climate ($\beta = .24$, $SE = .05$, $p < .001$) and with the frequency of home learning activities that help prepare for school ($\beta = .20$, $SE = .05$, $p < .001$). None of the frequency of home learning activities measures were significantly related to children's skills. Although a detailed report of all associations with control variables is not the focus of this study, we want to report an interesting finding for parents with an additional family language: They generally felt more self-efficacious in their parenting than monolingual German families ($\beta = .13$, $SE = .04$, $p = .002$). Regarding parental self-efficacy in supporting children's oral language skills, these parents stated that they felt less self-efficacious than monolingual German parents ($\beta = -.17$, $SE = .04$, $p < .001$).

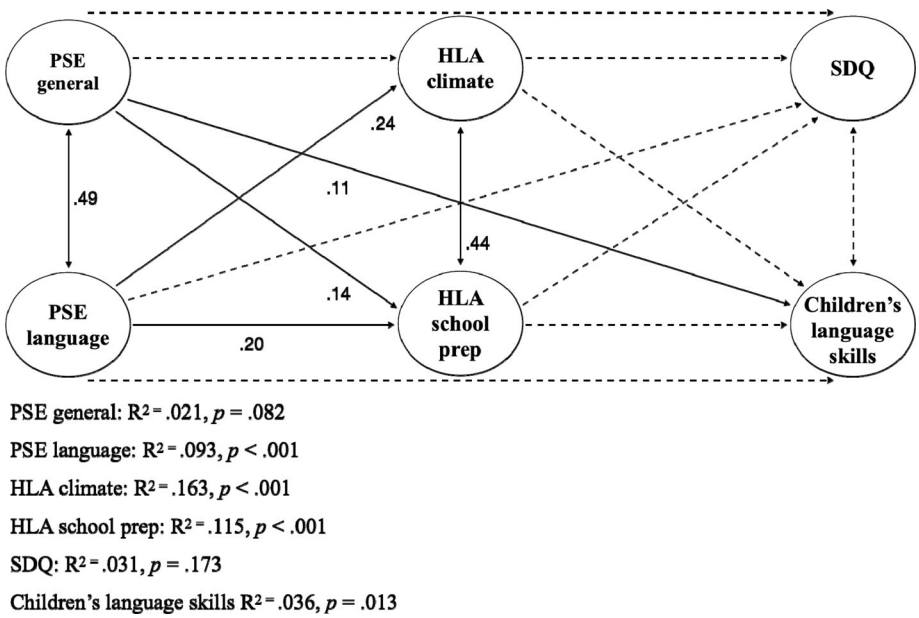

FIGURE 2 Path analysis model of the relationships between general parental self-efficacy, home learning activities, and children's skills. *Note*. Path analysis model with the full sample. $N = 727$. Displayed paths are standardized. Solid lines represent significant coefficients ($p < .05$); dashed lines represent nonsignificant coefficients. The model was controlled for children's age and gender, family language, net equivalent income, and parents' educational level. HLA = home learning activities; PSE = parental self-efficacy; SDQ = Strengths and Difficulties Questionnaire.

Parental self-efficacy in transition and language support: Links to home learning and child skills

Using a path model with the subsample, we tested the relationship among parental self-efficacy measures, the frequency of home learning activities, and children's skills (Figure 3). The model fit was acceptable relative to the small sample: comparative fit index = .97, root mean square of approximation = .06, standard root mean squared residual = .05. Due to the sample, we used a more parsimonious model. Therefore, we only added certain control variables to our measures that were already significant predictors in the full sample. The model was controlled for children's age, family language, net equivalent income, and parents' educational level. This was possible because we found no significant differences in our measures between the two samples. Parental self-efficacy in supporting children's oral language skills was significantly related to the frequency of home learning activities that foster the family climate ($\beta = .30$, $SE = .10$, $p = .001$) and with children's socioemotional skills ($\beta = -.19$, $SE = .08$, $p = .021$). The latter relationship indicates that parents who felt more efficacious in supporting their children's oral language skills described their children as having fewer socioemotional problems. We found no other significant relations.

DISCUSSION

This study's primary goal was to examine the relationships among parental self-efficacy measures, frequency of home learning activities, and child skills using the home learning environment model. By linking these variables, this study went beyond previous research

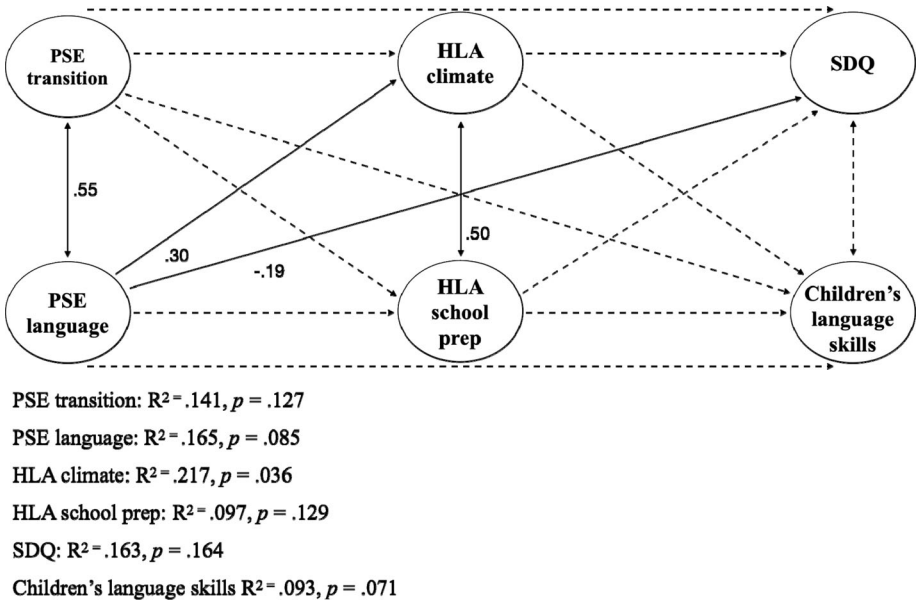

FIGURE 3 Path analysis model of the relationships among parental self-efficacy, home learning activities, and children's skills at the transition from preschool to elementary school. *Note*. Path analysis model with the subsample. $n = 108$. Displayed paths are standardized. Solid lines represent significant coefficients ($p < .05$); dashed lines represent nonsignificant coefficients. The model was controlled for children's age, family language, net equivalent income, and parents' educational level. HLA = home learning activities; PSE = parental self-efficacy; SDQ = Strengths and Difficulties Questionnaire.

(Stiévenart & Martinez Perez, 2021) that did not differentiate between domains of parental self-efficacy and between socioemotional and cognitive child skills.

General and language-specific parental self-efficacy: Links to home learning and child skill

Despite previous research that suggests a strong link between young children's emotional and academic skills (Ponitz & Rimm-Kaufman, 2011), we found no such link, either within the path model (with the control of background characteristics) or within the bivariate correlations. It may be that these skills are not linked due to parental assessment. However, in line with previous research (e.g., Peacock-Chambers et al., 2017), our study revealed significant links between measures of parental self-efficacy and the frequency of home learning activities. Parental self-efficacy in supporting oral language skills was significantly positively associated with both family climate and school preparation activities. In contrast, general parental self-efficacy was only significantly associated with school preparation activities and not with activities that enhance the family climate. It might be that general parental self-efficacy has a lower predictive value than task-specific parental self-efficacy (Wittkowski et al., 2017). A previous study showed links to children's skills with task-specific parental self-efficacy rather than general parental self-efficacy (Coleman & Karraker, 2003). Therefore, it is interesting that we found a significant relationship between children's oral language skills with general parental self-efficacy rather than with (task-specific) parental self-efficacy in supporting language skills. This may be explained by the intercorrelation of the parental self-efficacy measures and the addition of control variables in the path model. Parental self-efficacy in supporting language skills was positively correlated with children's oral language skills (see Table 2 in the supplemental material). Moreover, when we excluded general parental self-efficacy from the model, we found a significant link between parental self-efficacy in supporting language skills and children's oral language skills. The correlation of the two parental self-efficacy measures in Supplemental Table 2 indicates their shared variance. Both measures also correlate to the same degree with children's oral language skills. Overall, this points to a shared variance, but general parental self-efficacy has a stronger relationship to children's oral language skills.

Furthermore, we found no significant relationships between the frequency of home learning activities and the parental assessment of children's language or socioemotional skills. This indicates that the frequency of home learning activities did not affect how parents rated their children's socioemotional and oral language skills. This could be a bias on parents' part because their assessment of their children's age-appropriate oral language skills, whose abilities are within the norm, may differ from the standardized assessments (Bennetts et al., 2016). Research suggests that parental self-efficacy affects how parents perceive their children—for example, it affects children's mother-rated emotional and behavioral regulation problems (Jusiene et al., 2015). Verhage et al. (2013) could even show the relationship's direction with a cross-lagged path analysis: Parental self-efficacy predicted the perception of a child's negative temperament and not the other way around. Finally, we found a positive relationship between general parental self-efficacy and children's oral language skills: Parents who felt overall more efficacious reported that their children have better oral language skills than parents who felt less efficacious in their parenting role. Concerning the background variables, we found a positive link between parental self-efficacy in supporting language skills and the net equivalent income ($\beta = .22$, $SE = .05$, $p = .000$) and a negative link between the family climate and parents with an additional family language ($\beta = -.13$, $SE = .04$, $p = .003$). The second finding is interesting because parents with an additional family language reported that they generally felt more self-efficacious in their parenting than monolingual German families but seemed to lack self-efficacy in supporting their child's oral language skills.

Parental self-efficacy in transition and language support: Links to home learning and child skills

For this path model, we used a subsample of 108 parents with children about to start elementary school. We found significant relationships between the two measures of parental self-efficacy and between the two frequency of home learning activities measures. The relationship between the children's socioemotional skills and oral language skills was again not significant. However, we found significant relationships between parental self-efficacy in supporting language skills to the family climate and children's socioemotional skills. This suggests that parents who felt efficacious in promoting their children's oral language skills reported that they did more activities that promoted their family climate and that their children had fewer socioemotional problems. Both relationships are surprising because one could assume that this measure of parental self-efficacy is more likely to be linked to school-preparatory activities and children's oral language skills. To put this into context, we would like to take a step back into theory. Parental self-efficacy is a construct that should be assessed within a domain or task (e.g., parental academic efficacy) because efficacy beliefs vary from task to task (Bandura et al., 1996). Furthermore, Bandura et al. (1996) assumed that the more relevant the self-efficacy measures are for the respective tasks, the higher the links between self-efficacy measures and activities. Therefore, we assessed parental self-efficacy on a task-specific level and linked the measures with the respective tasks.

To the best of the authors' knowledge, this is the first study that linked several parental self-efficacy measures with several measures of the frequency of home learning activities. However, we found that parental self-efficacy in supporting language skills was significantly negatively related to children's socioemotional problems and not their language skills. This indicates that parents who felt more efficacious in supporting their children's oral language skills engaged in more activities to improve the family climate and perceived their children to have fewer socioemotional problems. This points in a similar direction in terms of content given that home-based literacy activities are related to children's socioemotional competencies (Baker, 2013; Rose et al., 2018). However, the activities themselves were not significant predictors in this model. Ceiling effects may play a role in the measures of children's oral language skills and parental self-efficacy. Moreover, in this model, the assessment of children's skills was made by the parents, which could be biased. Parental self-efficacy in supporting their children's transition did not affect how many activities, either in the family climate or for school preparation, parents did with their children and how parents assessed children's language and socioemotional skills. Given that parents reported that they already interact frequently with their children, this could indicate that parents are in general active at home regardless of how efficacious they felt in supporting their children in their transition to primary school. However, because parents with a low educational level and immigration background experience the transition as a stressful time in which they are more likely to face problems than other parents (Malti & Noam, 2016), the same path models as applied in this study with immigrant groups would be interesting.

Limitations

This study has several limitations. Our sample consists of middle-class families with relatively high educational levels and incomes and is therefore biased. For comparison, on average, 42.6% of people in Germany between the ages of 35 and 45 years had a higher secondary certificate or A-level (*Statistisches Jahrbuch—Deutschland und Internationales*, 2019). In our sample, 59.3% had a higher secondary certificate or A-level. Also, we have ceiling effects in several measures of parental self-efficacy, the frequency of home learning activities, and

children's skills. All measures rely on parental reports. Parental self-reporting is ideal for measuring self-efficacy because it should reflect parent's own beliefs (Wittkowski et al., 2017). However, standardized assessments of children's language and socioemotional skills may be more accurate. A previous study reported relationships between several parental report measures and the standardized assessment of children's oral language skills (Bennetts et al., 2016). Their findings on relations between parent-reported measures and standardized direct measures suggest that parent-reported measures are most accurate for children who exhibit either language difficulties or extraordinary language skills. For children between these two ends of the spectrum, direct measures would be needed to assess their language abilities. In this study, we found links between several measures that rely on parental reports—for example, between general parental self-efficacy and children's oral language skills. However, in future studies, both parental reports and standardized assessments of children's oral language skills should be applied, with later validation of the assessment via parental reports. Furthermore, the relatively small sample size could be problematic for the second model. For instance, relationships with medium to high effect sizes were not significant, probably due to the small sample size. We did not report these relationships because of their lack of statistical significance. However, the strength of the relationships indicates their potential importance. Further research with a larger sample is therefore necessary. Most of the research on parental self-efficacy relates to mothers and less to fathers. Research indicates that fathers and mothers perform or consider different childrearing tasks as important (e.g., Rollè et al., 2019). This distinction would have corresponding implications for measuring task-related parental self-efficacy. However, more studies on parental self-efficacy are gradually being published (Trahan, 2018). In the present study, we found no differences according to the parent's gender. In future studies, one research question might be whether there are gender-specific differences in parental self-efficacy. Furthermore, multiple group path models based on the families' immigration background as well as differential parental experiences due to older children in the family might be interesting.

Implications for science and practice

This is the first study on the relationships among parental self-efficacy, the frequency of home learning activities, and children's socioemotional and oral language skills. Moreover, we were able to examine these relations for different aspects of parental self-efficacy—that is, general parental self-efficacy and self-efficacy in supporting the transition to elementary school. We found no link between the frequency of home learning activities and (parental assessment of) children's skills, which contradicts previous research (Baker, 2013; Foster et al., 2005). This could be because of the way the data were collected and the ceiling effects of several measures. Therefore, further research is needed to reexamine these links with other measures. However, results revealed two direct relationships between parental self-efficacy and child skills: Parents who felt more efficacious did more home learning activities (for the family climate, literacy, and numeracy) and reported that their children had better oral language skills than parents who felt less efficacious in their parenting role. This relationship appears favorable and suggests the support of parental self-efficacy. Parental support programs that aim to improve parental self-efficacy should ensure that they cover its four sources: the experience of accomplishments, observations of how others succeed, verbal conviction (e.g., encouragement), and physiological arousal (e.g., the experience of joy; Bandura & Adams, 1977).

Data availability

The dataset belongs to the Federal Ministry for Family Affairs, Senior Citizens, Women, and Youth and cannot be shared.

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SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

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