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Abstract

It is assumed that additionally to the family background and child characteristics, the children's learning environments are crucial for the acquisition of early competencies. This study aimed to compare the effects of home and institutional learning environment on young children's vocabulary and to test necessary conditions for a potential compensatory effect of the institutional learning environment. Using longitudinal data from N = 557 preschool children (German National Educational Panel Study), we analysed to what extent family background and children's characteristics predicted home and institutional learning environments and to what extent these learning environments predicted vocabulary in preschool and primary school. In order to test if both learning environments predict vocabulary separately, we used almost identical indicators to operationalize them. The effects were estimated within a structural equation model. The study revealed that both, home and institutional learning environment, had small and separate effects on children's vocabulary. The home learning environment was more closely related to the family background, while the institutional learning environment was more closely related to the children's characteristics. This evokes new possibilities to discuss compensatory effects.

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Keywords
Home learning environment; Institutional learning environment; Vocabulary; Compensatory effect

Längsschnittliche Effekte der häuslichen und institutionellen Lernumwelt auf den Wortschatz von Grundschulkindern – ein Vergleich

Zusammenfassung
Es wird angenommen, dass für den frühen Kompetenzerwerb eines Kindes neben dem familiären Hintergrund und Merkmalen des Kindes die Lernumgebungen eine wichtige Rolle spielen. Die vorliegende Studie verfolgte das Ziel, die Effekte der häuslichen und der institutionellen Lernumgebung von Kindergartenkindern auf den frühen Wortschatzerwerb zu vergleichen und notwendige Bedingungen für einen kompensatorischen Effekt der institutionellen Lernumgebung zu überprüfen. Anhand längsschnittlicher Daten von N = 557 Kindergartenkindern aus dem deutschen Nationalen Bildungspanel (NEPS) wurde untersucht, in welchem Ausmaß der familiäre Hintergrund und die Merkmale eines Kindes die häusliche und institutionelle Lernumgebung prädizieren und in welchem Ausmaß diese wiederum den Wortschatz in der Vorschule und in der ersten Klasse vorhersagen. Um zu überprüfen, ob die beiden Lernumgebungen einen jeweils eigenständigen Beitrag zur Prädiktion des Wortschatzes leisten, wurden nahezu identische Indikatoren zur Operationalisierung verwendet. Mittels Strukturgleichungsmodellierung wurden die Effekte geschätzt. Die Studie zeigte, dass die häusliche und institutionelle Lernumgebung eines Kindes kleine sowie voneinander abgrenzbare Effekte auf den Wortschatz hatten. Dabei war die häusliche Lernumwelt stärker mit dem familiären Hintergrund assoziiert, während die institutionelle Lernumgebung stärker durch Merkmale des Kindes selbst prädiziert wurde. Dies eröffnet neue Möglichkeiten der Diskussion kompensatorischer Effekte.

Schlagworte
Institutionelle Lernumgebung; Häusliche Lernumgebung; Wortschatz; Kompensatorischer Effekt

1. Theoretical background

The ability to comprehend written texts is a universal cultural technique that is directly linked to educational success in modern societies (e.g., Bynner, Londra, & Jones, 2004). The acquisition of this ability is a complex process that involves different precursor literacy skills, such as the knowledge of letters and vocabulary (Whitehurst & Lonigan, 1998). These skills develop in the early years of education

and are not only linked to children's genetic predispositions but also to their home (e.g., Lehrl, Ebert, Roßbach, & Weinert, 2012; Melhuish, Phan, Sylva, Sammons, Siraj-Blatchford, & Taggart, 2008; Weinert & Ebert, 2013) as well as institutional learning environments (Becker, 2010; Melhuish, 2010; Melhuish et al., 2008). The aim of the present study is to investigate the effects of the home and institutional learning environment on vocabulary as an indicator of precursor literacy skills[1].

1.1 Home learning environment

The home learning environment (HLE) provided by the family, refers to all aspects, offers, and activities that might enhance a child's learning and, thereby, the acquisition of skills and competencies. As the child's development of academic competencies can be regarded as domain-specific (Wellman & Gelman, 1998), there is a well-established distinction between the home literacy and home numeracy environment in the English-speaking scientific community (e.g., LeFevre, Skwarchuk, Smith-Chant, Fast, Kamawar, & Bisanz, 2009). Taking this domain-specificity and prior research findings into account, Niklas (2015) postulated a theoretical framework on the relation between family background, HLE, and a child's competencies.

He grounded his theoretical framework mainly on two approaches, the Ecological Theory (Bronfenbrenner, 1979) and the Theory of Social Capital (Bourdieu, 1983). According to Bronfenbrenner (1979, 1986), an individual is surrounded by proximal and distal system components interacting with each other. The distal systems (macro- and exosystem) represent aspects of society or neighborhood whereas the proximal system (mesosystem) consists of the child's home and learning institutions (e.g., kindergarten, school). Interactions between the child and people involved in these environments (e.g., parents, educators) have a direct impact on the child's development. In his model, Niklas (2015) distinguished the distal component family background (e.g., socioeconomic status, education, migration background) and the proximal component HLE. The HLE is constituted by three important dimensions: cultural capital, cultural practice, and implicit learning (Niklas, 2015). Cultural capital includes cultural possessions, like books and artworks (Bourdieu, 1983). Cultural practice, in turn, refers to the family's cultural activities and interactions, such as reading together, library visits or the grammatical complexity of spoken language (e.g., Hoff, 2010; Niklas, Möllers, & Schneider, 2013; Retelsdorf & Möller, 2008). Implicit learning refers to assumed effects of parental cultural practice with the child that is not intended as direct teaching (Niklas, 2015).

Consistent with Niklas' theoretical framework (2015), on the one hand, studies already indicated that a more stimulating HLE promotes the acquisition of precursor literacy skills (e.g., de Jong & Leseman, 2001). On the other hand, it is

1 In line with Niklas and Schneider (2017) we use the term 'skill' (e.g., vocabulary) with regard to early forms of later literacy 'competencies' (e.g., reading).

well-documented that family background influences the child's academic competencies (e.g., Baumert & Maaz, 2006; Bos, Schwippert, & Stubbe, 2007; McElvany, Becker, & Lüdtke, 2009; OECD, 2013; Sylva et al., 2013; Tarelli, Valtin, Bos, Bremerich-Vos, & Schwippert, 2013; Weinert & Ebert, 2013). Children growing up in more privileged families without migration background have higher literacy achievements in school. However, recent research suggests that this is an indirect effect. For instance, Lehrl, Ebert, Roßbach, and Weinert (2012) found that this relation could be partly explained by indicators of the HLE (see Foster, Lambert, Abbott-Shim, McCarty, & Franze, 2005; Niklas et al., 2013). Thus, children who grew up in more privileged families were also provided with a more stimulating HLE. With regard to the different dimensions of the HLE, Niklas et al. (2013) documented close relations between family background and cultural capital as well as cultural practice, whereas the relation to implicit learning needs further investigation.

With reference to prior research, the various conceptualizations and operationalizations of implicit learning within the HLE have to be considered (Burgess, Hecht, & Lonigan, 2002). Ebert et al. (2013), for example, conceptualized implicit learning activities in a longitudinal study as a literacy-specific characteristic of a family and asked parents to rate ten literacy-related activities. They found a positive relation between the amount of these activities and children's initial vocabulary but no influence on vocabulary growth. Dumais (2006) investigated the effects of extracurricular activities during kindergarten and primary school on the gain of reading skills between first and third grade. Here, a positive relation, indicating the relevance of implicit learning by engagement in extracurricular activities, was found. Melhuish et al. (2008) included fourteen activities, whereby half of them were domain-unspecific (e.g., visiting friends or painting) and half of them were literacy- or numeracy-related activities (e.g., going to library). Their results revealed that domain-unspecific activities were not significantly related to under- or overachievement (e.g., vocabulary) of children, whereas the literacy-specific activities played a significant role. However, the operationalization did not allow separating cultural activities and implicit learning activities.

1.2 Institutional learning environment

In today's society, children typically attend preschool before entering school. In Germany, for example, 95 % of three to five year olds attend a preschool or daycare (Autorengruppe Bildungsberichterstattung, 2016, p. 59). Therefore, children are not only provided with an HLE but also with an institutional learning environment (ILE) prior to school enrolment. The ILE concept, similar to the HLE, unites offers and activities in an educational institution that might enhance a child's early skills. In empirical studies (e.g., Kuger & Kluczniok, 2008), three quality dimensions were identified: structural quality (e.g., socioeconomic group composition, availability of material), orientation quality (e.g., educators' attitudes), and process

quality (e.g., child-educator interaction). They can be conceptualized globally as well as literacy-specific (Kluczniok & Roßbach, 2014; Roßbach, 2005).

Studies revealed that attending preschool has a robust positive influence on a child's early literacy skills (e.g., Burger, 2010; Melhuish et al., 2008). It is assumed that especially children growing up in a less stimulating HLE benefit more from attending preschool in contrast to their peers growing up in a more stimulating HLE (Autorengruppe Bildungsberichterstattung, 2016; Becker, 2010). However, the state of research is not consistent: Ebert et al. (2013) found a positive influence of ILE (e.g., number of different kinds of books, promotion of language) on precursor literacy skills among children with a migration background but not with reference to native speaking German children. In contrast, Becker's study (2010) revealed that all children benefited from a higher number of books and toys within kindergarten regarding vocabulary. Referring to the process quality of the ILE, Niklas and Tayler (2018) as well as Schmerse et al. (2018) found a positive relation to verbal abilities (e.g., vocabulary), while Weinert and Ebert (2013), who analysed literacy-specific facets of process and structural quality (e.g., availability of books), did not find a positive effect on early literacy skills.

The question to what extent the ILE is able to compensate for family background and/or a less stimulating HLE is internationally relevant and was investigated in different studies with different approaches. Based on a systematic review, Burger (2010) concluded that a compensatory effect of the ILE on the cognitive development of children is supported by a number of studies. At the same time, however, another number of studies indicated no compensatory, but an additional effect for all students. A review of international empirical studies on compensatory effects for the cognitive development of children revealed that, within the regular ILE, compensatory effects are unlikely and costly since specialized programmes are needed for compensation (Roßbach, Kluczniok, & Kuger, 2008). The authors recommended to further investigate the learning environment of a child and pointed out, that the majority of studies were conducted in the United Kingdom and middle Europe, while the empirical evidence was rare for the German educational system. Recently, in a study with a German sample, Schmerse et al. (2018) found contra-indicators for a compensatory effect. Here, children growing up in a high-quality HLE benefited more from the ILE than their disadvantaged peers at age four.

To sum up, empirical evidence in terms of a compensatory effect of the ILE for children from disadvantaged families is hard to interpret, as the studies were conducted in different settings and point to different results. Moreover, only a few studies investigated literacy-related competencies. Against the backdrop of those inconsistent results, it may be appropriate to take a step back and investigate the conditions that have to be fulfilled to presume a compensatory effect.

To presume a compensatory effect of the ILE, three conditions have to be accomplished: The effect of family background on a child's skills or competencies is (at least partly) mediated by the child's learning environments (compensatory effect condition 1). The ILE of a child is not determined by family background (com-

pensatory effect condition 2). HLE and ILE have an independent effect on a child's skills or competencies (compensatory effect condition 3).

According to these conditions, recent research findings can now be systematized. In synopsis, condition 1 is likely to be fulfilled, as several studies indicated that a child's learning environment is relevant, which is a pre-condition to fulfil condition 1. However, the results differ across studies (Burger, 2010). Condition 2 is likely to be fulfilled, yet several studies suggest that children from disadvantaged families access institutions of lower quality compared to their peers from more privileged families (Becker & Biedinger, 2016; Cloney, Cleveland, Hattie, & Tayler, 2016; Lehrl, Kuger, & Anders, 2014). According to Hogrebe (2016) this might be due to a lower mobility of the parents belonging to a minority group based on ethnic and social segregation. These results suggest that ILE is not determined, yet to some extent predicted by family background.

With respect to condition 3, the independent effect of HLE and ILE on a child's skills or competencies, we can state that most studies taking HLE and ILE into account found effects of both learning environments on a child's vocabulary (e.g., Schmerse et al., 2018). So far, however, the effects of both learning environments were hardly comparable as they were operationalized based on different theoretical frameworks resulting in different indicators (e.g., number of books at home vs. number of children with a migration background at the institution). This raises the question how similar aspects of HLE and ILE contribute to a child's early literacy skills (e.g., number of books at home vs. number of books in the institution). Compensatory effect condition 3 has not yet been examined under this perspective.

2. The present study

To investigate whether the three conditions for a compensatory effect are fulfilled and thus, to verify if HLE and ILE predict vocabulary independently and if they are both predicted by family background in the same way, it is necessary to conceptualize both learning environments in a way that makes them comparable. Prior theoretical models focussing either the home or institutional learning environment display different conceptions and operationalizations of both learning environments. Due to these different research approaches of the HLE and ILE, there is no integrative theoretical model taking both learning environments and their longitudinal effects on a child's early skills into account. Furthermore, the indicators of both learning environments differed. Therefore, it is an open question, if the ILE can compensate for the HLE. It remains unclear (a) whether family background predicts the quality of HLE and ILE in the same way, (b) whether HLE and ILE predict early literacy skills equally, and (c) whether these effects last beyond the transition from preschool to primary school. With reference to the attempt that every student succeeds (ESSA, 2015), it is necessary to parallelize the HLE and ILE regarding their conception as well as operationalization and to investigate wheth-

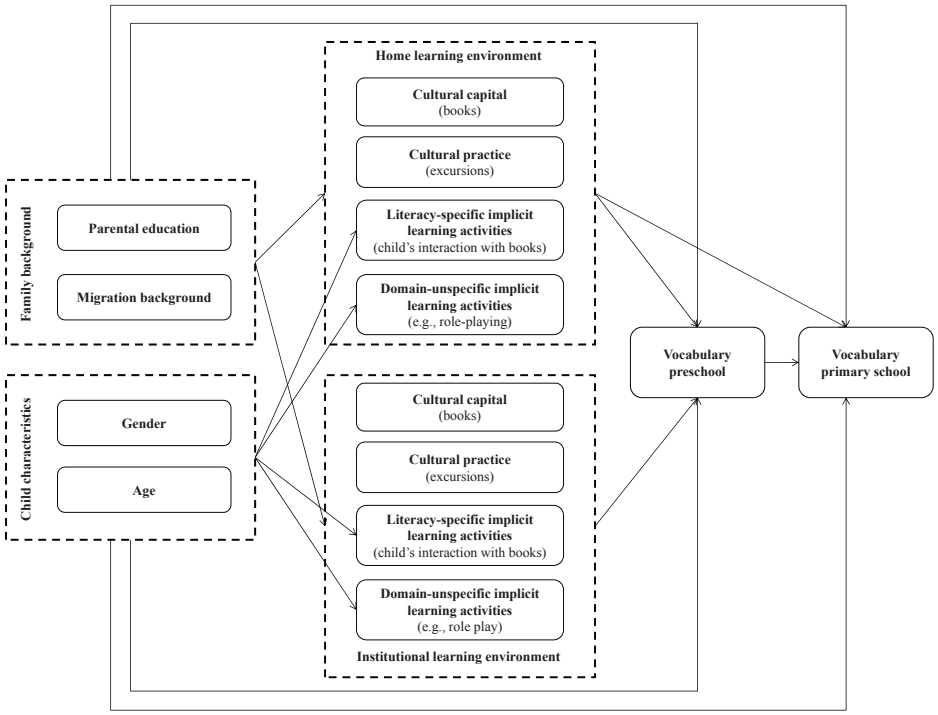
er both learning environments influence a child's competence development independently and additively or not.

Moreover, in consequence of focusing on parent-child interactions in the former research framework of HLE by Niklas (2015) and child-educator interactions with respect to process quality in the ILE, children's implicit learning activities by themselves (e.g., reading alone) and general activities (e.g., role-playing) that might be meaningful for developing precursor literacy skills were not taken into account yet. Defining these child-driven activities in a model also contributes to a better distinction between the different dimensions of the learning environments. For instance, cultural practice and implicit learning (Niklas, 2015) have a substantial overlap. Therefore, it is difficult to disentangle both constructs regarding their operationalization. Parental reading to a child or visiting a library could be ascribed to cultural practice as well as to implicit learning since both dimensions focus on the adult-child interactions. However, they do not cover child-driven activities with, for example, books. With reference to these child-driven implicit learning activities, it needs to be assumed that not only family background but additionally child characteristics are influencing variables. Regarding the child-driven choice of learning activities it is presumed that inter-individual systematic differences among children depending on the child's characteristics, such as gender and age, predict HLE, ILE, and vocabulary.

To address these desiderates, we propose a joint model of HLE and ILE based on the theoretical framework by Niklas (2015) that includes comparable dimensions of both learning environments to predict precursor literacy skills (see Figure 1).[2] Here, we focus on vocabulary as a precursor literacy skill since early vocabulary significantly predicts later reading development (Muter, Hulme, Snowling, & Stevenson, 2004; Speece, Ritchey, Cooper, Roth, & Schatschneider, 2004). We assume that the HLE directly predicts a child's vocabulary in preschool as well as in primary school. The ILE is directly linked to vocabulary in preschool, but is indirectly predictive for a child's vocabulary in first grade via the gained vocabulary in preschool. In our model, both the HLE and ILE are conceptualized to be four-dimensional. The dimensions cultural capital (availability of books at home resp. in preschool) and cultural practice (child visits a library with parents resp. educators) are domain-specific, and therefore, directly linked to literacy. The third dimension refers to a child's literacy-specific implicit learning activities and includes activities which are directly related to text material (child's interaction with books at home resp. in preschool). Finally, the fourth dimension covers a child's domain-unspecific learning activities which are not exclusively related to literacy but may enhance literacy-related skills (e.g., role-playing at home resp. in preschool).

2 Another possibility would have been to adapt and modify the model proposed by Kluczniok, Lehrl, Kuger, and Roßbach (2013), who developed a model integrating HLE and ILE by adapting the model of kindergarten quality by Tietze et al. (2013). However, to analyse potential compensatory effects we presume that the theoretical basis of Niklas' model (2015) allows a more adequate interpretation in terms of social disparities.

Figure 1: Model of relations between family background, child characteristics, HLE, ILE, and vocabulary acquisition



In line with prior research, we suppose that the family background does not only predict precursor literacy skills but also HLE and ILE. As a consequence, the model presumes that a part of the effects of family background on vocabulary is indirect via HLE and ILE.

In addition to existing models, we further assume that a child's characteristics influence implicit learning activities inherent in HLE and ILE components. As prior HLE models typically focused on parent-child interactions, the influence of family (and therefore parents') characteristics on these interactions were taken into account. However, when we integrate learning activities that a child can choose self-directed at home and in preschool, one can suppose that children select different activities biased by gender and age (Siraj-Blatchford, 2010). Thus, it is finally assumed that effects of child characteristics on vocabulary are indirect via both learning environments.

Based on our model, the main goal of the present study was to analyse the conditions of compensatory effects of the ILE. To gain a better understanding of not only cross-sectional relations but indications of longitudinal effects, we aimed to predict vocabulary in preschool and primary school. Therefore, we addressed the following questions within one model in order to test the necessary conditions for a compensatory effect:

1. To what extent do family background and child characteristics predict vocabulary in preschool and primary school?
   To test the compensatory effect condition 1 (that the effect of family background on vocabulary is mediated by the learning environments of a child), we analysed if vocabulary is not only predicted by family background and child characteristics but also indirectly via HLE and ILE.
2. To what extent do family background and child characteristics predict HLE and ILE?
   To test the compensatory effect condition 2 (that ILE is not determined by family background), we focussed on the relation between family background and ILE within our integrative model.
3. To what extent do HLE and ILE predict vocabulary in preschool and primary school?
   To test compensatory effect condition 3 (that HLE and ILE have an independent effect on vocabulary), we compared their specific contribution to predict vocabulary simultaneously within our integrative model.

3. Method

3.1 Participants and design

The used sample was a subsample of the second starting cohort of the longitudinal German National Educational Panel Study (NEPS). The aim of NEPS is to analyse educational transitions from early childhood to late adulthood with a multi-cohort sequence design (see Blossfeld, Roßbach, & Maurice, 2011). The NEPS consists of six panel cohorts with random samples for each cohort covering crucial educational transitions over the life course. Cohort 2 focuses on the transition from preschool to primary school. It was selected using indirect sampling based on the link between probable kindergartens and primary schools to enhance longitudinal and contextual analyses (Aßmann et al., 2011). At the first measurement point (t1) in kindergarten in 2011, N = 2,996 children were included in the sample. Due to the drop out caused by the transition from kindergarten to primary school, N = 557 children could be tested again in first grade in 2013 (t2). Since we were interested in longitudinal relations, we included data from those children, their parents, and their educators, who took part in NEPS at both measurement points. The children came from 159 preschools in 274 preschool groups. They were M = 5.00 (SD = 0.32) years old at t1 and M = 6.98 (SD = 0.31) years old at t2. Nearly 52 % were girls and 12 % of the children had a migration background, i.e. at least one parent and/or the child's grandparent was not born in Germany. About 60 % of the children had at least one parent with a higher education entrance qualification. This indicates a selective sample, restricting the representativeness.

3.2 Instruments

3.2.1 Children's vocabulary

Children's vocabulary was individually assessed at t1 and t2 using a German adaption of the Peabody Picture Vocabulary Test (Dunn & Dunn, 1981; Roßbach, Tietze, & Weinert, 2005). The test consisted of 77 items at t1 (M = 51.61; SD = 11.31) and 66 items at t2 (M = 41.34; SD = 9.25). The children heard a word and were then asked to find the corresponding picture out of four alternatives. The internal consistency of the test was sufficient at both measurement points (Cronbach's α_{t1} = .76; α_{t2} = .72). To make both tests comparable, the sum scores were z-standardized.

3.2.2 Family background

The family background was assessed at t1 via standardized interviews with the children's parents (LIfBi, 2016). We used the Comparative Analyses of Social Mobility in Industrial Nations (CASMIN; Lüttinger & König, 1988; see also Lechert, Schroedter, & Lüttinger, 2006) as an indicator for parental education. We took the highest CASMIN from either, father or mother. Moreover, we determined the child's migration background. A child was ascribed a migration background if at least one parent and/or the child's grandparent was not born in Germany.

3.2.3 Learning environments

HLE was assessed at t1 via standardized interviews with the children's parents, while ILE was assessed at t1 via standardized questionnaires with the children's educators (LIfBi, 2016). We chose the variables to operationalize HLE and ILE with respect to comparability between the learning environments.

3.2.4 Cultural capital

With respect to the HLE, parents were asked how many books they have at home (1 = "0 to 10 books" to 6 = "more than 500 books"). Within the ILE, we used the availability of books within preschool (Are picture books available in the preschool for 0 = "not available" to 3 = "almost all of children" so they can play with them at the same time) as an indicator for cultural capital.

3.2.5 Cultural practice

Cultural practice was captured by the frequency of parents visiting a library with their child (1 = "never" to 8 = "several times a day") for the HLE and the frequency of visiting a library with the preschool group during the last twelve months (1 = "never" to 6 = "daily") for the ILE.

3.2.6 Implicit learning activities (ILA)

Both the parents (HLE) and the educators (ILE) were asked how often the child is busy with different activities (1 = "never" to 8 = "several times a day"). One out of ten ILA was literacy-specific (interaction with books), while nine items were domain-unspecific for literacy (e.g., doing jigsaw puzzles, doing crafts, role-playing, see Table 1) in the HLE and in the ILE.

3.3 Statistical analyses

Before answering our research questions, we ran a set of preliminary analyses. All preliminary analyses were conducted with SPSS 23. In a first step, we handled missing data with the SPSS default algorithm for regression imputation. The amounts of data missing were rather small, ranging from none with respect to child characteristics, to 6 % (HLE items) and 7 % (ILE items) up to 10 % (family background variables). With regard to the clustered structure of the data (children in groups, groups in preschools), please note that no whole groups were investigated. In the present data set, only 6 % of the preschool groups had five or more children nested within them. Therefore, data were analysed at the individual level.

In a second step, we analysed the distribution of HLE and ILE variables and their interrelations. Table 1 shows the descriptive statistics for all variables used (a table showing the correlations between all variables analyzed can be found in the appendix). All HLE and ILE variables had a median above the theoretical median and were non-normally distributed.

Table 1: Descriptive statistics of the child characteristics, family background, early literacy skills, HLE, and ILE variables

	M	*SD*	Range	%	Md	Sk	Ku
Child characteristics							
Age	5.01	0.32	4.25–5.92		5	0.79	-0.63
Gender							
Girls				52			
Boys				48			
Family background							
Parental education			1–8		6	-0.26	-0.93
Migration background							
No				88			
Yes				12			
Early literacy skills							
Vocabulary t1	51.61	11.31	0–77		54	-1.36	2.12
Vocabulary t2	41.34	9.25	0–66		43	-0.58	-0.08
Home learning environment							
Cultural capital			1–6		4	-0.55	-0.61
Cultural practice			1–8		2	0.60	-0.60
Literacy-specific ILA			1–8		8	-2.31	5.64
Domain-unspecific ILA							
Comparing/collecting things			1–8		7	-1.41	3.16
Number games or counting			1–8		6	-1.15	1.71
Doing jigsaws			1–8		6	-0.75	0.57
Building games			1–8		6	-0.80	0.11
Doing crafts			1–8		7	-1.11	1.16
Role-playing			1–8		7	-1.35	1.74
Sports			1–8		7	-0.99	2.18
Music, singing or dancing			1–8		6	-0.94	1.16
Nature and gardening			1–8		6	-0.96	1.16
Institutional learning environment							
Cultural capital			0–3		1	0.90	1.37
Cultural practice			1–6		2	0.69	-0.80
Literacy-specific ILA			1–8		7	-1.21	1.10
Domain-unspecific ILA							
Comparing/collecting things			1–8		6	-0.69	0.13
Number games or counting			1–8		6	-0.79	0.48
Doing jigsaws			1–8		6	-0.81	0.51
Building games			1–8		6	-0.91	-0.05
Doing crafts			1–8		7	-1.22	1.34
Role-playing			1–8		7	-1.56	2.11
Sports			1–8		6	-0.79	0.98
Music, singing or dancing			1–8		7	-1.29	1.64
Nature and gardening			1–8		6	-0.52	-0.83

Notes. Md = Median; Sk = Skewness; Ku = Kurtosis; ILA = Implicit learning activities.

Table 2 gives an overview of the correlations of the domain-unspecific ILA. In contrast to our expectations that they were positively correlated with one another, there were positive and negative interrelations between the domain-unspecific ILA variables. This casts into doubt the assumption that ILA is a latent reflective construct predicting the frequency of a child's activities.

Table 2: Correlation coefficients of the domain-unspecific ILA variables (HLE and ILE)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
(1) Role-playing		.320*	.165*	.143*	.074*	-.151*	.196*	.265*	.121*
(2) Doing crafts	.203*		.221*	.299*	.220*	-.188*	.079*	.079*	.090*
(3) Comparing	.097*	.180*		.385*	.260*	.141*	.195*	.228*	.314*
(4) Counting	.040	.022	.145*		.441*	.086*	.068*	.166*	.226*
(5) Jigsaws	.069*	.230*	.191*	.066*		.073*	.002	.166*	.101*
(6) Building	-.042	-.076*	.161*	.246*	.014		.094*	-.003	.096*
(7) Sports	.038	-.016	.088*	.222*	-.072*	.155*		.234*	.275*
(8) Music	.205*	.217	.124*	.082*	.082*	-.009	.184*		.144*
(9) Nature	.087*	.144*	.164*	.085*	.085*	.123*	.168*	.157*	

Note. Correlation coefficient is Kendal's Tau. Coefficients for implicit learning activities at home are shown below the diagonal, while activities in the institution are above it.

*$p < .05$.

3.3.1 Modelling approach

The model was estimated using partial least squares structural equation modelling (PLS-SEM). All analyses were conducted with R (R Core Team, 2015), applying the package plspm by Sanchez, Trinchera, and Russolillo (2015).

PLS-SEM is a variance based-approach to structural equation modelling that estimates a measurement model for latent variables and its indicators, and a structural model, representing relations between the latent constructs (path model). It is an alternative approach to structural equation modelling that, according to Hair, Hult, Ringle, and Sarstedt (2014), is theoretically preferred over covariance-based SEM (CB-SEM) if the aim is more exploratory than confirmatory. As we focus on the question if HLE and ILE predict vocabulary independently from one another, we meet PLS-SEM's capacity: the aim of PLS-SEM is not to test how well a theoretical model fits the data but to maximize the explained variance in the dependent variable when the model is estimated (Hair et al., 2014).

In addition to these theoretical considerations, there were also statistical issues that spoke in favour of PLS-SEM in the current study: The NEPS data had different levels of measurement, and the HLE and ILE indices as well as the vocabulary

scores were non-normally distributed. In contrast to CB-SEM, PLS-SEM can handle these types of data as it makes no assumption on data distribution (Hair et al., 2014; Weiber & Mühlhaus, 2014). Moreover, it is suitable for constructs measured using a single-item approach and latently modelled variables within one model.

The pattern of correlations between ILA variables, as shown in Table 2, suggested that the construct might not be reflective as it is common in social sciences. It is reasonable to assume that implicit learning activities were not predicted by an underlying latent construct, but that the construct is formed by all activities taken together. If it is assumed that the construct is not homogenous but consists of different facets that together result in a scale, those constructs are formative (Jarvis, MacKenzie, & Podsakoff, 2003). As PLS-SEM can estimate formatively and reflectively measured constructs, we tested if a formative modelling of the domain-unspecific ILA had an advantage over the more common reflective approach.

To assess statistical significance, standard errors and confidence intervals were calculated via bootstrap validation on the basis of 500 samples.

3.3.2 The measurement model: operationalization and assessment

To specify the measurement model, we used a single-item approach with respect to the cultural capital, cultural practice, and the child's literacy-specific ILA, both for the HLE and ILE. The domain-unspecific ILA at home and in kindergarten was intended to be measured latently by nine indicators each. However, the weights calculated as covariance between the indicators of the latent variable and the construct loadings and communality did not accomplish the measurement model quality criteria (Henseler, Ringle, & Sinkovics, 2009). There were two learning activities – doing crafts and role-playing – that constituted the respective latent factors within the reflective model. They were relevant to variance in vocabulary with respect to both learning environments and met the statistical criteria to remain in the model (ILA_{home}: $\alpha = .38$, DG. $\rho = .73$; $ILA_{institution}$: $\alpha = .54$, DG. $\rho = .81$). In a next step, we used a formative approach to operationalize the ILA. The outer weights were calculated as partial least squares regression weights from the latent variable on its indicators (Henseler et al., 2009). As within the reflective measurement model, the remaining constructs were doing crafts and role-playing at home as well as in preschool. Therefore, the formative approach did not have an advantage over the reflective one and was not further investigated. Nevertheless, it stressed role-playing and doing crafts as important domain-unspecific ILA. These empirically derived domain-unspecific ILA can be described as creative activities.

Within the reflective model, domain-unspecific ILA was therefore modelled latently by the two items role-playing and doing crafts for HLE and ILE. Table 3 shows the weights, loadings, and communalities for the indicators of those constructs. The outer loadings for domain-unspecific ILA indicators were above .70 and, therefore, sufficient. To assess the quality of the reflective measurement mod-

el, we further checked convergent validity and discriminant validity (Hair et al., 2014; Sanchez, 2013). An indicator of convergent validity is the average variance extracted (AVE). The AVE was above the recommended cut off value of 0.50 for ILA within HLE and ILE. Moreover, there were no cross loadings indicating discriminant validity.

Table 3: Assessment of outer model (reflective)

Construct and indicators	Weight	Loading	Communality
ILA_{home}			
Doing crafts	0.645	0.799	0.638
Role-playing	0.621	0.781	0.610
$ILA_{institution}$			
Doing crafts	0.642	0.857	0.734
Role-playing	0.559	0.805	0.648

Note. ILA = Implicit learning activities.

3.3.3 The structural model: assessment

There are no global fit criteria available to assess the structural model, because PLS-SEM fits the model to the data, and not vice versa as in CB-SEM. To assess the structural model, recommendations are to evaluate the significance of the paths between the latent constructs, the explained variance of the endogenous constructs (R^2) and their effect sizes (f^2) (Hair et al., 2014). The effect sizes f^2 were interpreted as suggested by Cohen (1992): a value of .02 indicates a small, a value of .15 a medium, and a value of .35 a large effect.

To address our research questions, (1) to what extent family background and child characteristics predict vocabulary in preschool and primary school, (2) to what extent family background and child characteristics predict HLE and ILE, and (3) to what extent HLE and ILE predict vocabulary in preschool and primary school, we analysed the structural model's paths to get detailed information on the relation between the variables. Further, we tested the three main conditions to assume a compensatory effect within our integrative model.

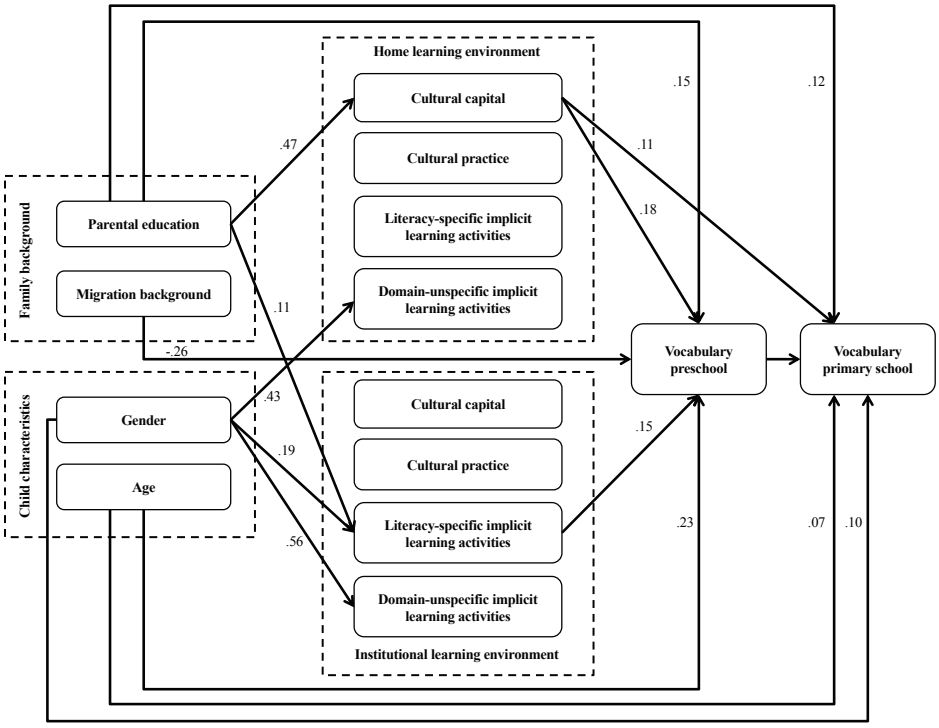
To test if the effect of family background on vocabulary is (at least partly) mediated by the child's learning environments (compensatory effect condition 1) we took the total effects of family background and child characteristics on vocabulary into account. Total effects are the sum of direct (family and child characteristics → vocabulary) and indirect effects (family and child characteristics → HLE/ ILE → vocabulary). If the total effects are higher than the direct effects, a mediation effect is indicated. With respect to compensatory effect condition 2, we analysed to what extend ILE is predicted by family background. Therefore, we summarized

family background and child characteristics respectively to assess their joint effects (f^2) on dimensions of the HLE and ILE in addition to analysing the path model. To assume a compensatory effect, the effect of family background on ILE should be small. To assess compensatory effect condition 3, that ILE and HLE have an independent effect on vocabulary, we summarized the dimensions of HLE and ILE and compared their effects (f^2) on vocabulary.

4. Results

Figure 2 shows the structural model. The path coefficients can be interpreted as standardized weights of an ordinary least squares regression and are comparable to each other. For reasons of simplicity, Figure 2 shows significant paths only. Based on this model our research questions will be answered.

Figure 2: Structural model to predict vocabulary acquisition (standardized path coefficients)



4.1 Research question 1: To what extent do family background and child characteristics predict vocabulary in preschool and primary school?

With regard to the family background, vocabulary in preschool was directly predicted positively by parental education (B = .15), while a migration background had a negative effect (B = -.26). Vocabulary in primary school was predicted positively by parental education (B = .12), whereas no significant direct effect of migration background was found. In terms of child characteristics, age had a positive effect on vocabulary in preschool (B = .23), while gender was not predictive. When it comes to vocabulary in primary school, both gender (B = .10) and age (B = .07) had a positive effect on vocabulary, indicating an advantage for girls and older children.

With respect to compensatory effect condition 1 (that the effect of family background on vocabulary is mediated by the child's learning environments), we can state that both, child characteristics and family background, predicted vocabulary in preschool indirectly, as their total effects on vocabulary in preschool and primary school were larger than their direct effects. Parental education had a significant total effect of .25 on vocabulary in preschool and a significant total effect of .30 on vocabulary in first grade. The migration background had a significant total effect of -.19 on vocabulary in first grade, although there was no significant direct effect. While gender had no significant total effect on vocabulary, the age of a child had a total significant effect on vocabulary in primary school of .20.

In sum, it can be stated that there were substantial direct effects from family background and child characteristics on vocabulary, while the larger total effects indicated indirect effects via HLE and ILE. One necessary condition for a compensatory effect was accomplished. This leads to our second research question.

4.2 Research question 2: To what extent do family background and child characteristics predict HLE and ILE?

With respect to the family background, Figure 2 reveals, that in terms of HLE parental education predicted cultural capital (B = .47), while migration background was not predictive towards any dimension of the HLE. In terms of the ILE, parental education predicted literacy-specific ILA (B = .11), but not cultural capital. A migration background was not predictive towards any dimension of the ILE.

In terms of child characteristics, we can state that age was not predictive for any dimension of the learning environments, while gender predicted the domain-unspecific ILA within both, the HLE (B = .43) and the ILE (B = .56). Moreover, it predicted literacy-specific ILA within the ILE (B = .19) but not within the HLE.

Focussing on compensatory effect condition 2, Table 4 summarizes the joint predictive power of family background and child characteristics towards the dimensions of HLE and ILE. Family background predicted three dimensions of HLE

with small (literacy-specific ILA, cultural practice) to medium (cultural capital) effects. Within the ILE, family background predicted literacy-specific ILA practically significant with a small effect, while it was neither relevant for domain-unspecific ILA, cultural practice nor for cultural capital. In turn, child characteristics predicted the domain-unspecific ILA as well as the literacy-specific ILA within the ILE with small to medium effects, while within the HLE the domain-unspecific ILA was predicted with a small effect.

Table 4: Effect sizes (f^2) of family background and child characteristics on HLE and ILE

	Home learning environment				Institutional learning environment			
	Cultural capital	Cultural practice	ILA		Cultural capital	Cultural practice	ILA	
			Specific	Unspecific			Specific	Unspecific
Family background	0.32	0.03	0.12	0.01	0.00	0.01	0.02	0.00
Child characteristics	0.00	0.00	0.00	0.23	0.00	0.00	0.04	0.45

Notes. $ILA_{specific}$ = Literacy-specific implicit learning activities; $ILA_{unspecific}$ = Domain-unspecific implicit learning activities.

According to these results, compensatory effect condition 2, that ILE is not determined by family background, was met. Moreover, compared to the predictability of HLE by the family background, the effect of family background on ILE was rather small. Further, the results revealed that child characteristics seem to be more important within the ILE. Finally, the third research question investigated the effects of HLE and ILE on vocabulary.

4.3 Research question 3: To what extent do HLE and ILE predict vocabulary in preschool and primary school?

Within the HLE, the dimension cultural capital predicted vocabulary in preschool (B = .18) and in first grade (B = .11). No other dimension of the HLE was predictive towards vocabulary in preschool or primary school. Within the ILE, the dimension literacy-specific ILA predicted vocabulary in preschool (B = .15). No other dimension of the ILE was predictive towards vocabulary in preschool.

With respect to compensatory effect condition 3, that HLE and ILE have an independent effect on vocabulary, we focussed on the joint effects of the HLE and ILE dimensions on vocabulary. Taken all dimensions together, the HLE predicted vocabulary in preschool with a small effect (f^2_{HLE} = 0.04). The same applied to the ILE (f^2_{ILE} = 0.06). Further, HLE was predictive for vocabulary in primary school (f^2 = 0.03).

With regard to the conditions to assume a compensatory effect, this indicates that compensatory effect condition 3 was accomplished: HLE and ILE predicted vocabulary independently of one another.

In sum, family background, child characteristics, HLE, ILE, and vocabulary in preschool explained 46 % of variance in vocabulary in first grade, while 31 % of variance in vocabulary during preschool could be explained by child characteristics, family background, HLE, and ILE.

5. Discussion

In the present study, we investigated the predictive power of family background and child characteristics as well as characteristics of home and institutional learning environment on children's vocabulary in preschool and first grade within an extended theoretical framework based on Niklas (2015).[3] The aim was to evaluate the conditions which are necessary to assume a compensatory effect of learning in kindergarten. Building upon prior theoretical considerations, we proposed a model integrating home and institutional learning environment in a parallelized way, aiming to make their effects on vocabulary and their predictability by family background and child characteristics distinguishable and comparable. Our study led to three main findings according to our research questions and with respect to a compensatory effect: Firstly, family background and child characteristics predicted vocabulary in preschool and primary school substantially; and this effect was partly mediated by both learning environments (meeting compensatory effect condition 1).

Secondly, parental education and a child's gender were substantially related to learning environment facets of the home and preschool. All in all, the connection between parental education and home-related learning facets was the strongest. Moreover, the predictive power of family background towards the preschool learning environment was not as strong as the predictive power child characteristics had towards this learning environment. Our study revealed that there were differences in the literacy-specific and domain-unspecific implicit learning activities between boys and girls within preschool, while at home these gender preferences occurred for the children's domain-unspecific activities only. This indicates that compensatory effect condition 2 was met.

Thirdly, both learning environments were predictive towards vocabulary. Within preschool, implicit learning activities were more relevant compared to cultural capital and practice. Based on our results, we can state that compensatory effect condition 3 was met: characteristics of the preschool learning environment were predictive towards vocabulary. In this context, the influence of gender on children's engagement with books is especially important. For boys, it could hinder a possible compensatory effect of learning in preschool.

3 For interpretation of the findings please note that no casual relations were investigated.

In general, our findings are in line with previous studies (e.g., Sylva et al., 2013; Weinert & Ebert, 2013) that found small to medium interrelations between children's early literacy skills and their home and preschool learning environment. Beyond that, our findings suggest that both environments represent distinguishable concepts with independent relations to endogenous family background variables and child characteristics as well as to exogenous outcome variables as vocabulary. While home characteristics (especially cultural capital) were more closely related to the family background, preschool facets (especially implicit learning activities) were more closely related to child characteristics. These findings have implications for theory building and practice.

In the present study, home-related cultural capital was measured by the amount of books available in the household. In other studies, this variable is used as an indicator for a family's socioeconomic status (e.g., Bos, Tarelli, Bremerich-Vos, & Schwippert, 2012). Therefore, it could be productive to launch a discussion about the theoretical localization of cultural capital. If cultural capital is seen as part of the learning environment, the home learning environment would be theoretically strongly linked to parental education. In Niklas' (2015) model, on which the present assumptions were built, cultural capital is treated as such a part. Following the sociologic perspective of Bourdieu (1983) one could argue, however, that cultural capital is a part of the family background which, in turn, influences how learning at home is supported (see also Bos et al., 2012). In future studies, consequently, it would be of interest to separate the effects of cultural capital from other home-related characteristics on a child's competence development (see also Linberg, 2017).

Our study can contribute to theory building as it revealed that a compensatory effect of learning in preschool cannot be assumed offhand. In line with several studies (e.g., Baumert & Maaz, 2006; McElvany, Becker, & Lüdtke, 2009; OECD, 2013) we replicated the link between family background and a child's academic competencies, while it can be assumed that part of this effect is mediated by characteristics of the home learning environment (e.g., Foster et al., 2005; Lehrl et al., 2012). With regard to the question if preschools compensate for less stimulating homes, we did find an independent effect of the preschool learning environment towards vocabulary, which is a necessary condition for a compensatory effect. However, in line with Becker and Biedinger (2016) and Hogrebe (2016) we also found that preschool characteristics were not fully independent of family background.

This finding has not only theoretical, but also practical implications. The gender bias found referred to the child's implicit learning activities and was medium for domain-unspecific activities and small, but substantial, for literacy-specific activities, which, in turn, was linked to vocabulary. As the domain-unspecific activities referred to creative activities and the literacy-specific activity referred to interaction with books, it is likely that educators might consider these activities as girl-typical. As a consequence, they may not encourage boys to get involved in these activities as much as they encourage girls. As the child's involvement with books in preschool was directly linked to vocabulary, this could prevent a compensatory effect

of the preschool learning environment for boys. Gender sensitive pedagogy encouraging boys to engage with literacy-related materials such as books could positively influence a boy's early literacy skills.

Several limitations of the present study should be considered when generalizing the results. First, even though we used a nationwide sample and, therefore, expanded the findings of former studies (e.g., Weinert & Ebert, 2013), the representativeness is questionable as the sample was selective due to a low percentage of children with migration background and a large percentage of children from privileged families. Moreover, the sample had a partly clustered structure which had to be neglected in the analyses and the treatment of missing values was suboptimal, as it may have led to minor distortions. This restricts the validity of the results. Further, there was little variance in home learning activities which might lead to an underestimation of their effects. Furthermore, we used a single-item approach to operationalize cultural capital, cultural practice, and literacy-specific implicit learning activities restricting the construct validity of the results. On the other hand, the single-item approach increased the validity of the comparison between the two learning environments. In future studies it should be investigated if the present findings can be replicated within a multi-item approach.

Notwithstanding that these limitations have to be considered when judging the results of our study, we can conclude that both the home and institutional learning environment have distinguishable effects on a child's early literacy skills and relate differently to family and child characteristics. With respect to a compensatory effect of the preschool learning environment, our study directs the focus on the children's implicit learning activities that can be influenced by the educators.

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Appendix

Table A1: Correlations between all indicators of family background, child characteristics, home learning environment, institutional learning environment, and children's vocabulary

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
Family Background															
(1) Parental education	1	**-.085**	-.043	-.056	**.391**	**.077**	**.125**	**.066**	.034	-.006	.006	.004	**.071**	-.004	-.040
(2) Migration background		1	.056	-.042	**-.117**	.040	**-.129**	-.017	.052	.001	.024	-.069	.038	-.031	**-.074**
Child characterstics															
(3) Gender			1	**-.093**	-.033	**.076**	.021	.011	-.028	**.117**	**-.347**	**.288**	**-.088**	**.170**	.013
(4) Age				1	-.026	.011	-.017	.007	**.065**	.022	.044	-.047	**-.077**	**-.091**	.003
Home learning environment															
(5) Cultural capital					1	**.124**	**.258**	**.106**	-.063	-.025	.003	.058	**.092**	-.004	-.030
(6) Cultural practice						1	**.092**	**.071**	.059	.040	.018	.028	.066	**.070**	.011
(7) Literacy-specific ILA							1	**.244**	**.078**	**.183**	.038	**.214**	.017	**.154**	.042
Implicit learning activities															
(8) Comparing/collecting things								1	**.145**	**.191**	**.161**	**.180**	**.088**	**.124**	**.164**
(9) Number games or counting									1	**.066**	**.246**	.022	**.222**	**.082**	**.115**
(10) Doing jigsaws										1	.014	**.230**	**-.072**	**.082**	**.085**
(11) Building games											1	**-.076**	**.155**	.009	**.123**
(12) Doing crafts												1	-.016	**.217**	**.144**
(13) Sports													1	**.184**	**.168**
(14) Music, singing or dancing														1	**.157**
(15) Nature and gardening															1
(16) Role-playing															

Notes. Correlation coefficient is Kendal's Tau. Significant correlations are bold.

Table A1 continued

Table A1 continued

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
Institutional learning activities															
(17) Cultural capital															
(18) Cultural practice															
(19) Literacy-specific ILA															
Implicit learning activities															
(20) Comparing/ collecting things															
(21) Number games or counting															
(22) Doing jigsaws															
(23) Building games															
(24) Doing crafts															
(25) Role-playing															
(26) Sports															
(27) Music, singing or dancing															
(28) Nature and gardening															
Vocabulary															
(29) Vocabulary t1															
(30) Vocabulary t2															

Table A1 continued

Table A1 continued

	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)
Family Background															
(1) Parental education	.038	-.005	.019	**.068**	.033	.049	-.060	.010	-.027	.011	-.005	-.026	.037	**.161**	**.188**
(2) Migration background	-.018	-.005	-.001	**-.100**	-.009	-.009	-.004	-.059	.005	-.001	-.057	**-.074**	**-.111**	**-.278**	**-.201**
Child characterstics															
(3) Gender	**.260**	-.024	.034	**.166**	.059	**.127**	**.200**	**-.533**	**.436**	**.381**	-.039	**.194**	-.043	-.067	-.016
(4) Age	-.038	.031	-.032	.001	.025	.040	.000	.061	-.054	-.047	**.082**	.015	**.076**	**.207**	**.140**
Home learning environment															
(5) Cultural capital	**.068**	.033	.040	**.084**	.054	.058	.023	.043	.019	-.011	.006	.023	**.090**	**.210**	**.213**
(6) Cultural practice	.044	-.007	**.167**	-.027	-.011	-.018	.045	-.014	-.036	-.041	.002	-.026	-.014	.054	.028
(7) Literacy-specific ILA	**.109**	.022	.001	.041	-.002	.026	.003	.010	.029	.011	.013	**.070**	.034	**.099**	**.100**
Implicit learning activities															
(8) Comparing/collecting things	**.097**	-.011	-.025	.017	.038	.061	.018	-.022	**.070**	.012	.002	.015	-.018	.012	.026
(9) Number games or counting	.040	-.014	-.035	.031	.053	**.096**	**.088**	.059	.021	-.023	.040	.014	.031	-.023	.004
(10) Doing jigsaws	**.069**	.003	-.035	.016	-.013	.018	**.089**	**-.068**	.060	.022	-.013	.046	-.034	-.053	-.040
(11) Building games	-.042	.009	.009	-.012	.009	-.012	-.044	**.223**	**-.141**	**-.145**	.060	-.057	.015	.042	.035
(12) Doing crafts	**.203**	-.009	.008	**.081**	.026	.030	.037	**-.173**	**.233**	**.110**	-.004	**.080**	.014	-.048	-.021
(13) Sports	.038	-.060	.010	-.067	.013	-.040	-.052	.035	**-.083**	**-.074**	**.072**	-.038	-.016	.000	.014
(14) Music, singing or dancing	**.205**	-.033	-.001	.021	.008	.021	.037	**-.121**	**.107**	**.084**	-.007	**.094**	-.036	.000	-.016
(15) Nature and gardening	**.087**	-.023	-.023	-.006	.051	-.012	-.007	-.013	.030	-.009	.034	.050	-.028	-.006	-.033
(16) Role-playing	1	.021	-.022	**.073**	.061	.025	.002	**-.162**	**.080**	**.147**	-.042	**.072**	.029	-.022	-.001

Table A1 continued

Table A1 continued

	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)
Institutional learning activities															
(17) Cultural capital		1	-.038	**.113**	.041	.022	.030	.060	-.022	-.009	-.056	-.015	**.088**	**.073**	**.078**
(18) Cultural practice			1	.017	.051	**-.075**	-.058	-.029	.011	.026	**.085**	**.089**	.041	.037	-.022
(19) Literacy-specific ILA				1	**.402**	**.342**	**.260**	.025	**.249**	**.173**	**.083**	**.132**	**.181**	**.092**	.061
Implicit learning activities															
(20) Comparing/collecting things					1	**.385**	**.260**	**.141**	**.221**	**.165**	**.195**	**.228**	**.314**	.060	.036
(21) Number games or counting						1	**.441**	**.086**	**.299**	**.143**	**.068**	**.166**	**.226**	.047	.043
(22) Doing jigsaws							1	**.073**	**.220**	**.074**	.016	**.166**	**.101**	-.028	-.013
(23) Building games								1	**-.188**	**-.151**	**.094**	-.031	**.096**	**.073**	.036
(24) Doing crafts									1	**.320**	**.079**	**.204**	**.090**	-.049	-.035
(25) Role-playing										1	**.196**	**.265**	**.121**	-.027	-.017
(26) Sports											1	**.234**	**.275**	.056	-.011
(27) Music, singing or dancing												1	**.144**	-.001	.033
(28) Nature and gardening													1	**.089**	.058
Vocabulary															
(29) Vocabulary t1														1	**.480**
(30) Vocabulary t2															1

Notes. Correlation coefficient is Kendal's Tau. Significant correlations are bold.

UNSERE BUCHEMPFEHLUNG

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Bildungsgerechtigkeit als Versprechen

Zur Rechtfertigung und Infragestellung eines mehrdeutigen Konzepts

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Dieser Band vereint grundlagentheoretisch und empirisch orientierte Beiträge, in denen Bildungsgerechtigkeit als ein mehrdimensionales Konzept erkundet wird. Ein gemeinsamer Ausgangspunkt ist die Skepsis gegenüber verbreiteten eindeutigen Auskünften, was denn unter Bildungsgerechtigkeit zu verstehen sei. Unter Bezugnahme auf theoretische Diskussionen und empirische Befunde bemühen sich die Beiträge um eine stärkere Differenzierung der Debatte. Indem gezeigt wird, dass das Versprechen von Bildungsgerechtigkeit alles andere als eindeutig ist, wird zugleich die dilemmatische und aporetische Struktur einer Orientierung an diesem Versprechen ins Blickfeld gerückt. Immer wieder erweist sich Bildungsgerechtigkeit als ein Versprechen, das weder einlösbar noch aufgebbar ist, und gerade deshalb geht es in den Beiträgen sowohl um die Rechtfertigung als auch um die Infragestellung eines mehrdeutigen Konzepts.