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Full length article

The contribution of two funds of identity interventions to well-being related student outcomes in primary education

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ABSTRACT

Drawing on students' 'funds of identity' is supposed to contribute to more equitable educational outcomes, both in terms of achievement and well-being-related outcomes. However, it is not obvious how teachers can uncover and use students' funds of identity (FoI) and little is known about the actual effects of an approach based on funds of identity theory. This study investigates the (perceived) effects on students' engagement, motivation for learning, school well-being, social initiative and self-efficacy of two different interventions in which four primary school teachers tried to uncover and use their students' FoI ($N = 31$). A mixed methods design was used. Observations were conducted before, during and after the FoI-interventions, teachers filled in questionnaires and semi-structured interviews were conducted with teachers and students. In order to track how the intervention was enacted, logbooks of teachers were collected. The quantitative results showed significant improvement of students' engagement and social initiative during the FoI-interventions, which was confirmed by the observations. In the interviews and logbooks teachers and students reported positive effects of the interventions on students' engagement, motivation for learning, school well-being and self-efficacy. The interventions from this study can serve as examples for other schools.

1. Introduction

In the increasingly diverse educational contexts in contemporary societies, many teachers are teaching students with different social and cultural backgrounds than their own. For those teachers it may be difficult to tailor their lessons to the knowledge of their students, for example of the traditions of their communities and the stories passed on in their families. For students, such a discontinuity between school and home, which particularly occurs for children with an ethnic minority or low socioeconomic background, can result in losing their engagement with school and performing below their abilities (Bronkhorst & Akkerman, 2016; Vedder et al., 2006). These effects may be reinforced by a deficit approach that seeks the causes of underachievement in school among minority and lower-SES students in their supposed limited intelligence, language deficits, lack of motivation, or immoral behaviour (Valencia, 1997). Thinking in terms of deficits and unfamiliarity with the knowledge that students acquire outside of school, can make teachers having lower expectations of those students. This is problematic, because teachers (often unconsciously) adapt their behaviour to their

lower expectations; they thereby do not offer these students optimal support in realizing their potential (Swartz, 2009; De Boer et al., 2010; Rubie-Davies, 2015). This hinders the realization of equal educational opportunities. The current study applies educational approaches based on the Funds of Identity (FoI) theory (Esteban-Guitart, 2016, 2021b; Esteban-Guitart & Moll, 2014; Saubich & Esteban-Guitart, 2011), in which teachers learn to make better use of the knowledge and skills that students acquire outside of school. Both theories do not approach children in terms of deficits or limitations, but rather in terms of competences. The starting point is that all students have obtained valuable knowledge and skills through life experience outside of school that can be used at school.

However, although several positive effects of this approach are assumed, little empirical evidence exists to support these claims. Most research into the educational use of FoI concerns qualitative studies, mapping educational practices from the teacher's perception (Hogg & Volman, 2020). For example, Ordoñez et al. (2021) found in a qualitative intervention study positive outcomes of a FoI intervention on students' motivation. Volman and 't Gilde (2021) also found benefits of funds approaches in the interview part of their study on students' school well-being, engagement and self-confidence; however, these positive outcomes could not be confirmed by the quantitative part of their study. A possible explanation was that the questionnaire could have been too general to capture significant intervention effects (Volman & 't Gilde, 2021). Therefore, more quantitative research is needed, on a student level, to investigate the effects of FoI interventions. The present article reports on a mixed method study, including both quantitative and qualitative measurements, that investigates the contribution of two different approaches based on FoI theory to outcomes at the student level. In addition to the measurements that were used in previous studies (interviews and questionnaires), also systematic student observations in the classroom were conducted in order to capture intervention effects on specific student outcomes.

The outcomes we were interested in are educational outcomes in the social domain, such as well-being and motivation. On the one hand, such outcomes are conditional for educational achievement (Van Petegem et al., 2007; Van Nuland et al., 2010), on the other hand they are important aspects of students' development in themselves. Well-being-related outcomes are easily overlooked in approaches of equal opportunities that primarily focus on educational achievement. Therefore we investigate the (perceived) contribution of two different FoI approaches on primary school students' engagement, motivation for learning, school well-being, social initiative and self-efficacy.

1.1. Funds of knowledge approach

According to the FoK approach, all students are competent and, regardless of their linguistic, religious, social, economic and cultural circumstances, acquire valuable knowledge and skills acquired through life experience outside school (Moll et al., 1992). The FoK approach assumes that every student has numerous extracurricular sources of knowledge (funds of knowledge), historically built and culturally developed knowledge and skills that are essential for the functioning of households and individuals (Moll et al., 1992). In the FoK approach, the household and the community are seen as places that are potentially rich in cultural and cognitive sources of knowledge that can be useful for instruction in the classroom (Moll et al., 1992). The FoK approach suggests that teachers make funds of knowledge of children from communities other than their own visible in the classroom and tailor their education to them (Moll et al., 1992). Part of a FoK approach are ethnographic student home visits to discover the funds of knowledge of the students and their families. These can lead to a better understanding of students and their families, an improvement of family-school relationships, modification of teachers' and students' prejudices and stereotypes, and more inclusive and culturally congruent pedagogies (Barton & Tan, 2009; Esteban-Guitart & Vila, 2013; González et al., 2005; Hogg, 2011; Lin & Bates, 2010; Llopart et al., 2018; Whyte & Karabon, 2016). However, making use of students' FoK by home visits is a time consuming methodology, which is not always feasible in practice (Hogg & Volman, 2020). Esteban-Guitart (2012, 2016) further developed the FoK approach and introduced the concept of Funds of Identity in which not only the community of students is taken into account (Esteban-Guitart, 2012, 2016; Esteban-Guitart & Moll, 2014; Hogg & Volman, 2020; Saubich & Esteban-Guitart, 2011). In the current study we focus on this funds of identity (FoI) theory (from here on also referred to as funds approaches).

1.2. Funds of identity theory

While the FoK approach takes the knowledge and skills available in the community to which the student belongs as its starting point, FoI theory emphasizes knowledge and skills that students acquire outside of school and that they *themselves* define as important aspects of their identity (Esteban-Guitart, 2012, 2016; Hogg & Volman, 2020; Saubich & Esteban-Guitart, 2011). Funds of identity are defined as 'significant people, institutions, cultural artefacts, geographical spaces, and meaningful practices, passions and interests embedded in a learner's definition of themself' (Esteban-Guitart, in press, p. 4)). It thus refers to those parts of funds of knowledge that participants use to define themselves (Esteban-Guitart & Moll, 2014). In previous studies several benefits have been identified in terms of students' motivation, engagement, collaboration, attitudes and learning outcomes and processes (Alvarez et al., 2021; Ordoñez et al., 2021; Volman & 't Gilde, 2021).

Esteban-Guitart (2016, 2021a) distinguished five specific sub-categories of FoI: geographical (when places, such as a river, country, village, or mountain, serve as a source of self-identification), practice-based (an activity such as work, sports, making music), cultural (artefacts such as religious symbols or national flags), social (friends, family, colleagues), institutional (belonging to a religion or family). Another subtype, the existential funds of identity, was proposed by Poole and Huang (2018). Existential FoI are positive and negative experiences that students use to define themselves, such as the experience of being bullied as a child.

1.3. Finding and using students' funds of identity

The FoI theory makes a plea for teaching that draws on knowledge, skills and experiences of students they themselves consider as valuable. This may involve knowledge about, for example, household, technology, religion, art, language and music; but also specific skills such as football or dance. Funds of identity can be found in family life, but also in other places such as the peer group and popular culture (Moje et al., 2004). More recently, Facebook, Instagram, YouTube, TikTok, games and vlogs have become important sources of knowledge and skills for children ('t Gilde & Volman, 2020).

A variety of ways have been described in which teachers can find FoI. Teachers can use assignments that invite students to show something from their own life, such as writing a story, making a drawing or taking pictures (Hogg & Volman, 2020). These stories, drawings or pictures are called 'identity artefacts', "documents created by the learners about themselves, in which they try to capture all the things that make sense and are meaningful to them and which, subsequently, can be used by teachers to work on curricular and pedagogical content" (Subero et al., 2018, p. 156). Conversations with parents or observing students can also be used to find students' FoI ('t Gilde & Volman, 2020).

A next step for a teacher is to integrate and build on students' FoI in one's teaching. Esteban-Guitart and Moll (2014) describe FoI as a box of tools that can be used to link the curriculum to students' prior knowledge, interests and lifestyles. This can be done for example, by asking students to act as experts or to let students process subject matter in a (creative) form in which they feel competent or are enthusiastic about ('t Gilde & Volman, 2020).

The possibilities to integrate and build on students' FoI in the curriculum, however, depend on the school context. 't Gilde and Volman (2020) found that it was more difficult to implement a funds approach when a school sticks to predefined teaching methods. In schools with a fixed curriculum and a teacher-led approach, teachers often feel too much pressure to finish the planned lessons to give much room to students' input as the FoI suggests ('t Gilde & Volman, 2020).

1.4. FoI and equal opportunities

Equal opportunities in education are often thought to be realized by taking away obstacles that hinder the educational performance of students with a minority or low-SES background. This implies a focus on raising the educational achievement levels of these students, in particular in basic skills like reading and math.

Funds approaches relate to equal opportunities in several ways. In line with the above, funds approaches aim to enable students from other (cultural) backgrounds than the dominant culture to perform more optimally. The mechanisms that are supposed to underlie this effect are that 1) with knowledge of students' FoI it is better possible for a teacher to build on students' existing knowledge (work in students' zone of proximal development), which results in better academic outcomes and improved knowledge development (Lee, 2001; Subero et al., 2017); 2) when students feel seen and valued at school they will become more involved in the lessons, which in turn will lead to better achievement. However, a funds approach also address the issue of equal opportunities in another way. It considers personal and social variables like engagement, motivation for learning, well-being and self-efficacy not only as important for learning, but also important in itself. A single focus on educational achievement and basic skills can result in limited attention for student's own initiatives and their FoI, which can in turn have a negative impact on well-being-related outcomes, such as engagement and self-confidence. And the other way around, a FoI approach has been suggested to positively contribute to well-being-related outcomes (Volman & 't Gilde, 2021).

1.5. FoI and opportunities to develop motivation for learning, engagement, school well-being, social initiative, and self-efficacy

In this study we focus on a number of well-being related educational outcomes. These are important educational outcomes from an equal opportunities perspective, as they are supposed to be related to educational achievement. Moreover children should have equal opportunities to develop these outcomes at school, as they are valuable in themselves.

First of all, there is a strong relationship between the *motivation for learning* of students and their school performance (Peña-López, 2017; Van Nuland et al., 2010). Students who become motivated for learning show greater commitment, tackle problems, are curious, seek challenges, exchange knowledge more often and use effective learning strategies (Hardre & Reeve, 2003).

There are indications that a funds approach can contribute to the three basic needs that are usually distinguished in relation to students' motivation: autonomy, relatedness and competence (Deci & Ryan, 2000). For example, a FoK/I approach could strengthen the sense of connection between teacher and students. In previous studies on FoI, many teachers reported getting to know and understand students better (Gassler, 2020; Llopart et al., 2018; Volman & 't Gilde, 2021). A funds approach can also meet the need for autonomy, because students are allowed to make their own contributions based on knowledge they have acquired outside of school and on their own interests and environment (Esteban-Guitart & Moll, 2014; Subero et al., 2017; Ordoñez et al., 2021). These elements support autonomy and may therefore can contribute to students' motivation for learning (Thoonen et al., 2011; Toshalis & Nakkula, 2012). A funds approach can also contribute to a sense of competence (Volman & 't Gilde, 2021): all students, including those who may not perform well in all school subjects, are invited to show what they know and can do.

Engaged students have been shown achieve better results than less engaged students (Finn, 1989; Finn & Rock, 1997; Newmann, 1992). Engagement is closely related to motivation for learning. While motivation for learning can be seen as an internal state of a student (that can be provoked by the educational circumstances), engagement can be seen as the visible expression of that motivation (Conley & French, 2014). A state of high engagement is characterized by high concentration, intense experience, intrinsic motivation and flow of energy, and a high degree of satisfaction (Laevers et al., 2016). Increasing students' engagement is a common argument for

using students' FoK/I (Hogg & Volman, 2020).

When students' *well-being at school* is good, that is when they feel good at school (Hendrikx et al., 2008), this has a positive effect on students' performance and motivation (Van Petegem et al., 2007). Students with a low level of well-being tend to be less attentive and less motivated for learning (Van Petegem et al., 2007). Social relationships of students at school, with the teacher and fellow pupils, are important for students' school well-being (Holfve-Sabel, 2014, Van Petegem et al., 2007). Peetsma et al. (2002) make a distinction between school well-being in relation to the teacher and well-being in relation to fellow students. Improving both types of school well-being has a positive effect on students' motivation for learning (Holfve-Sabel, 2014; Konu & Rimpelä, 2002). Because a funds approach can contribute to improved social relationships between students and the teacher and between students themselves (Barton & Tan, 2009; Volman & 't Gilde, 2021), an improvement in school well-being can be expected.

Social initiative is making verbal and non-verbal contact in a social environment (Laevers & Depondt, 2008). During a funds approach, social initiative is stimulated by encouraging students to actively participate in learning processes (Subero et al., 2017). Because students get to know the FoI of peers, they can discover similarities, and possibly make contact more quickly with students they did not know well before.

Self-efficacy, the confidence a person has in his/her own capabilities to accomplish a task or solve a problem (Bandura, 1997), leads both indirectly and directly to better learning performance (Lane et al., 2004; Relich et al., 1986; Schunk, 2003). The most effective way to strengthen self-efficacy is by experiencing success (Bandura, 1997). In a previous study teachers indicated that using FoI positively influenced students' self-efficacy. Sharing their knowledge and skills with classmates made students proud (Volman & 't Gilde, 2021).

1.6. The present study

The aim of this study was to obtain a detailed insight in the contribution of two different FoI interventions to a number of well-being related educational outcomes, that we consider relevant in terms of equal opportunities in primary education. The research question was formulated as follows: What are the (perceived) effects of FoI interventions to students' engagement, motivation for learning, school well-being, social initiative, and self-efficacy? For this purpose, the effects of two different FoI interventions were evaluated by use of both student observations, teacher questionnaires and interviews (with teachers and students).

2. Method

2.1. Context

This study was conducted in the context of the Educational Research Lab Amsterdam (ERLA), a partnership of Amsterdam knowledge institutions and primary schools. The two participating schools (school A and school B) were recruited for this project through their school boards on the basis of affinity with the subject. Both schools are located in Amsterdam (the capital of the Netherlands). School A is a regular primary school. School B is a school for newcomers; students who have lived in the Netherlands for a maximum of one year. At school B, students receive education to learn, speak, read and write the Dutch language. The teachers who participated in the study received theoretical input from the researchers during pre-intervention meetings.

2.2. Interventions

At both school A and B, two teachers developed and applied an intervention in their classrooms, based on the theory of FoI, during a period of six weeks. At school A, this was a well-defined FoI intervention. The teachers used assignments that let the students make identity artefacts, which served as mediating resources that allowed the teacher to link learning experiences from within and outside the school context (Esteban-Guitart, 2016; Subero et al., 2017). The assignments were designed in advance and described in so-called 'intervention cards' based on the six sub-categories of FoI that were distinguished by Esteban-Guitart (2012, 2021a) and Poole and Huang (2018). The aim of the intervention was for teachers to reveal, build on and make use of students' FoI in their lessons. In school A, teachers worked for the first time with a FoI approach in their classrooms. For them, the intervention cards served as a guideline, as something to hold on to when working with FoI.

An example of an intervention assignment is making a self-portrait (taken from Bagnoli, 2009). This assignment could reveal different funds of identity of students (social, geographical, practical, institutional, cultural). Students were asked to bring a family photo to school. In the classroom, a conversation was held between the students about their photos. Then the students drew a self-portrait in which there was also room for things they like or that are important to them. A diptych of self-portrait and family photo was made and presented to the class.

At school B, the FoI approach was more flexible and not fully developed in advance. Here, teachers had more experience than the teachers from school A with working with FoI and mainly focused on what happened spontaneously in the classroom. An example is a situation in which students were folding flowers. During this lesson, it turned out that a student had a special interest in origami and was good at folding not only flowers, but also other figures, such as frogs because he often practiced this at home. The teacher gave class attention to this skill and the student in question was allowed to teach his fellow students how to fold a frog. The teachers' goal was to put this student in the spotlight and let him/her elaborate on a subject in which he/she is feeling competent.

Another example concerns how the teachers at school B applied the FoI approach during the vocabulary lessons at school. As part of the intervention the school started to work with a new vocabulary method, which zoomed in on the background and origin of the

students. An example is a lesson in which students were allowed to take a book from home that is important to them. This book could also be written in the student's home language. Students read an excerpt from the book and told their classmates about it. The aim of this assignment was to give students the feeling that their own interests, input and knowledge (e.g., from their home language) matter and to encourage students to acquaint with each other's (language) background, interests and qualities.

2.3. Design

A mixed methods design was used to evaluate the results of the FoI interventions. The quantitative data collection consisted of multiple student observations. The aim of the observations was to measure whether there was a change in student engagement during the intervention period. Before the start of the intervention, an initial observation took place during an activity that resembled the intervention activity as closely as possible, but in which the teacher did not address students' FoI. At school A, observations were made during social science lessons and at school B during vocabulary lessons. The second observation focused on lessons in which students' FoI were actively made visible and used by the teachers. At school A, this involved a lesson in which students were asked to make a 'self-portrait' (based on Bagnoli, 2009) and to present this portrait to the group. At school B, the second observation took place during a lesson in which students worked in pairs to prepare a presentation for their peers on a self-made informative book on a self-chosen topic. In the other class from school B, the second observation was conducted during a lesson given by a student on a subject he was personally interested in and very knowledgeable about, namely electrical charges. The final (third) observation took place at the schools at the end of the intervention period, during the same type of (non FoI) activity as at the initial measurement.

In addition, before and after the intervention period, teachers completed a questionnaire about how they perceived students' engagement, school well-being, and social initiative. The questionnaires were completed by the teachers before (beginning of March 2021) and after the intervention (end of April 2021). These questionnaires were only completed for students who were also observed. The aim was to gain insight into (possible) changes during the intervention period, from the teacher's perspective.

Finally, qualitative data were collected through interviews with teachers and students, and through teachers logbooks, in order to obtain insight in how teachers applied the FoI interventions in their practices, and into the perceived effects of the interventions for students' motivation for learning, engagement, school well-being, and self-efficacy.

2.4. Participants

The four teachers participating in the interventions were self-selected: they participated voluntarily in the interventions based on affinity with the FoI theory. The background characteristics of the participating teachers are shown in Table 1.

An information letter with active consent was sent to the parents. All students whose parents gave consent participated in the study. A maximum number of nine students per class/teacher was chosen, so that the observations could be made as reliably as possible. A total of 31 students participated in the study (see Table 2). The students were varied in terms of gender, linguistic home situation, the educational level of the parents and ethnic background (see Table 3). The age of the students was between 6 and 11 years old (see Table 4).

2.5. Instruments

2.5.1. Observations

The observations were conducted by a researcher who was not involved in the development of the FoI interventions and who was trained to observe students' engagement by practicing with a training DVD (Laevers et al., 2011). Each student was observed, per measurement, at three moments, namely at the beginning, in the middle and at the end of the lesson. At each measurement, the student was observed for a maximum of two minutes.

The participating students ($N = 31$) were scored on (observed) engagement using the observation scale of Laevers et al. (2011). Students' engagement was scored on a 5-point scale, whereby half points were also awarded. Engagement was operationalized as the extent to which the child is mentally active during the activity, with score 1 corresponding to 'no activity' and score 5 to 'sustained intense activity'. The reliability of the scale was satisfactory to good (see Table 5).

2.5.2. Questionnaire

The teachers completed a questionnaire (pre- and posttest) about students' (perceived) engagement, school well-being and social initiative. The questionnaire of 12 items was derived from an existing observation instrument (called ZIEN; part of the Dutch student monitoring system). The teachers were asked to indicate for their students on a four-point Likert scale (1 = this is not true, 4 = this is

Table 1
Background characteristics of the teachers.

Teacher	Gender	Ethnic background	Age	Years of teaching experience
School A teacher 1	Male	Dutch	29	8
School A teacher 2	Female	Dutch	24	3
School B teacher 1	Female	Dutch	25	2
School B teacher 2	Male	Dutch	29	2

Table 2
Grade level and amount of participating students

School.	Grade level	Amount of participating students
A	1 (6–7 years)	8
A	3 (8–9 years)	8
B	Higher grades (9–11 years)	9
B	Higher grades (9–11 years)	6

Table 3
Students' background characteristics.

		Overall		School A		School B	
		N	%	N	%	N	%
Gender	Male	12	39 %	5	31 %	7	47 %
	Female	19	61 %	11	69 %	8	53 %
Home language	Only Dutch	8	26 %	8	50 %	0	0 %
	Dutch and other language(s)	6	19 %	3	19 %	3	20 %
	Other language(s)	17	55 %	5	31 %	12	80 %
Country of birth parents	Both parents born in the Netherlands	4	13 %	4	25 %	0	0 %
	Both parents not born in the Netherlands	23	74 %	8	50 %	15	100 %
	One of the parents born in the Netherlands	4	13 %	4	25 %	0	0 %
Educational level parents	None to high school	1	6 %	1	6 %	0	0 %
	MBO (post-secondary vocational education)	4	25 %	4	25 %	0	0 %
	HBO/WO (university for applied sciences/university)	11	69 %	11	69 %	0	0 %

Table 4
Students' age.

	Age (average in years)	s.d.	N
Overall	8,65	1,66	31
School A	7,31	0,95	16
School B	10,07	0,88	15

Table 5
Reliability (Cronbach's alpha) of the scale for observed engagement.

	Measurement 1 ($N = 31$)	Measurement 2 ($N = 30$)	Measurement 3 ($N = 31$)
Observed engagement	0,77	0,66	0,65

completely true) to what extent they recognized the student in a statement. An example item for (perceived) engagement is: 'The student is working concentrated on an activity for a while'. An example item for well-being is 'The student makes a vital, lively impression'. An example item for social initiative is: 'The student has a clear input during joint activities'. The reliability (internal consistency) of the scales of the questionnaire was sufficient to good (see Table 6).

2.5.3. Teacher interviews

At the end of the intervention period, the participating teachers were interviewed in pairs ($N = 4$). The interviews were semi-structured. In the first part of the interview, the focus was on how teachers applied the FoI intervention in their classrooms. In the second part, the effects of the funds approach for students were discussed. For instance, the following question was asked: 'What do you think are the effects of the funds intervention for students?' In the last part, the focus was specifically on the contribution of the funds approach to motivation for learning, engagement, well-being, social initiative, and self-efficacy. Teachers were also asked about valuable elements of the FoI approach in relation to these outcomes. It was also asked to what extent and how did the context influence the outcomes of the intervention.

Table 6
Reliability (Cronbach's alpha) of the questionnaire scales.

	Measurement 1 ($N = 31$)	Measurement 2 ($N = 31$)
Perceived engagement	0,69	0,78
Well-being	0,80	0,70
Social initiative	0,88	0,89

2.5.4. Student interviews

After the intervention period, semi-structured interviews were conducted in pairs with all observed students ($N = 31$) to learn more about the effects of the intervention experienced by the students. The interview topics were included in a semi-structured interview guideline. In the first interview part, student's experiences with the intervention lessons was discussed. In the second part, the results and valuable elements of the intervention were discussed in more detail. Students were asked about outcomes in terms of engagement, motivation for learning, school well-being, social initiative, and self-efficacy.

2.5.5. Logbooks

The teachers reflected on their experiences in a logbook during the intervention period. The purpose of the logbook was to encourage the teachers to reflect on their experiences and findings resulting from the intervention during the implementation period. The logbook also provided the researcher insight in the implementation process. The teacher repeatedly answered eight open questions in the logbook, about what FoI activities they performed and when in the classroom, what went well and what the teacher would do differently next time. Furthermore, teachers filled in which specific FoI were found and how they were used in the classroom. Finally, teachers were asked about the perceived effects for the students. In Table 7, the measurement methods per variable are presented.

2.6. Data analysis

2.6.1. Quantitative data

To analyse the quantitative data, repeated measures variance analyses were performed, both across schools and per school. Analyses were performed with and without checking relevant background data of students (gender, age, home language, parents' country of birth and parents' educational level). The reference categories for the background variables are boy (compared to girl), home language Dutch (compared to multilingual or other (multi)lingual), parents both born in the Netherlands (compared to one or two not born in the Netherlands), parents at most secondary education (compared to MBO, HBO or WO diploma and compared to unknown).

The scores on the questionnaire before the intervention on (perceived) engagement, well-being and social initiative were compared with those after the intervention. It was expected that (perceived) engagement, well-being and social initiative would be higher after the intervention than before the intervention.

For the scores on the observations of students' engagement, comparisons were made between pre- and post-test, between pre- and intermediate-measurement and between intermediate and post-test. The expectation was that the students would score highest on observed engagement during the intermediate measurement, because only the intermediate measurement involved a lesson in which the FoI of students were actively used. In addition, the expectation was that students would score higher on the post-test than on the pre-test, because it was expected that the positive effect of the intervention on students' engagement in the intermediate measurement would have a positive influence on engagement during the post-test. In addition to testing the difference, the size of the difference was also tested (effect size). The magnitude of the difference was calculated using partial eta squared ($\eta p2$). A value of 0.01 represents a small effect, a value of 0.06 represents a medium effect, and a value of 0.14 or greater represents a large effect.

2.6.2. Qualitative data

The interviews were transcribed verbatim. Subsequently, a content analysis was applied to the transcripts and the logbooks. The content analysis cycle consisted of four steps that were performed continuously: data reduction, data display, drawing conclusions and verification (Miles & Huberman, 1994). Data reduction took place by labelling fragments from the transcripts that were important for answering the research question. The coding was conducted using both deductive and inductive methods, using the computer program Atlas Ti (version 8) for qualitative analysis. The used codes are displayed in Table 8. Deductive, a priori, codes were derived from the expected effects on the dependent variables (e.g. an increased sense of well-being) and on important elements of the intervention (e.g. making funds of knowledge visible). During the coding process, it was found that teachers sometimes commented on additional effects and on the appropriateness or practicality of their intervention. This lead to additional, inductive codes. Inductive codes were also used to capture the mechanisms that explained why effects did or did not occurred.

Possible answers to the research question were identified based on observed patterns in the coded fragments. These were verified by comparison with other excerpts from other interviews or logbooks. Fragments related to the same outcomes/effects or elements were grouped to discover patterns that could be part of a particular trend or an interesting relationship. When labelling relevant fragments, specific citations were selected for illustrative purposes. Possible conclusions were drawn based on these patterns and were later verified by examining similar fragments from other interviews or opposing claims made by other teachers and/or students.

Table 7

Measurement method per dependent variable.

Dependent variable	Quantitative	Qualitative
Engagement	Observations, questionnaire	Interviews
School well-being	Questionnaire	Interviews
Social initiative	Questionnaire	Interviews
Self-efficacy		Interviews
Motivation for learning		Interviews
Knowledge development		Interviews

Table 8
Used codes.

Categories	Codes
Initial codes concerning effects	well-being in relation to peers, well-being in relation to teacher, motivation and engagement, self-efficacy, social initiative, class climate, equal opportunities, knowledge development
Initial codes concerning the intervention	intervention design, context factors, FoI made visible, FoI used in education, challenges for the teacher
Additional codes concerning effects	enthusiasm, listening to each other, more spontaneous way of teaching, emergence of new friendships between students
Additional codes concerning the intervention	use of home language, teacher skills, outcomes for teachers
Clarifying mechanisms	feeling seen and valued, (students') own initiative, students working together, improved relations, getting to know each other better, creating something (identity artefacts), exploring differences and similarities

The interview responses were coded by the first author. Because of the interpretative and iterative nature of the data analysis, it was not possible to determine inter-rater reliability (Akkerman et al., 2008). To enhance the trustworthiness of the analysis, the following procedures were followed:

1. All fragments that were difficult to code were discussed with another experienced researcher. These fragments and codes were discussed until consensus was reached and the coding was adjusted to the outcome of this discussion;
2. An audit procedure was followed in which one (random) chosen transcript (10 %) was checked for assigned codes by a researcher who was not involved in this study (Kvale, 2007). This researcher examined the various fragments and codes from the first researcher (coder) and it was determined whether there was agreement on the codes in the fragments concerned. Any doubtful codes assigned were discussed with the coder until agreement was reached.

3. Results

3.1. Descriptive statistics

Table 9 shows the descriptive data (from the questionnaire) of students' engagement, school well-being and social initiative, as perceived by the teachers. The mean scores on students' engagement, school well-being and social initiative are higher on the post-measurement (measurement 2) than on the pre-measurement (measurement 1) (see Table 9).

Table 10 shows the descriptive data from the observations for students 'engagement. The average score on observed engagement in measurement 2 (during a FoK/I activity) was higher than in measure 1 (pretest), and on measurement 3 (posttest) higher than in measurement 1 (pretest) (see Table 10).

3.2. Outcomes analysis of variance for repeated measures

3.2.1. Overarching outcomes/results for school A and B

Table 11 shows the results of the variance analyses for repeated measures for students' engagement, social initiative and school well-being – as perceived by the teachers. Without controlling for background variables, there is a significant positive difference in students' engagement and social initiative before and after the intervention: students make on average progress in their engagement and in taking social initiative. The effect of the difference for both dependent variables is large ($\eta_p^2 > 0.14$). There are, however, no significant differences for well-being before and after the intervention.

The analyses with control for background data show a different picture. For all three dependent variables (perceived engagement, social initiative and well-being), the difference in score between the pre- and post-test is not significant, after controlling for background data.

Table 12 presents the results of analyses of students' observed engagement. Without controlling for background data, all three differences appear to be significant. On average, the students are more involved during the post-measurement than the pre-measurement, more involved during the intermediate measurement than during the pre-measurement and more involved during the intermediate measurement than during the post-measurement. The effect for all three differences is large ($\eta_p^2 > 0.14$).

After controlling for background data, however, only the difference between the pre-measurement and intermediate measurement appears to be significant. On average, the students score significantly higher on the intermediate measurement than on the pre-

Table 9
Averages on the questionnaire scales ($N = 31$).

	Measurement 1		Measurement 2	
	M	s.d.	M	s.d.
Engagement	3,05	0,57	3,29	0,52
School well-being	3,30	0,51	3,44	0,42
Social initiative	3,12	0,68	3,37	0,67

Table 10

Averages for observed engagement.

	Measurement 1			Measurement 2			Measurement 3		
	M	s.d.	N	M	s.d.	N	M	s.d.	N
Observed engagement	3,43	0,70	31	4,14	0,47	30	3,90	0,52	31

Table 11

Results of the repeated measures analyses of variance for the questionnaire scales.

	Without control variables				With control variables			
	F	df	*p*-value	η_p^2	F	df	p-value	η_p^2
Engagement	17,79	1;30	<0,01	0,37	0,87	1;24	0,36	0,03
School well-being	4,15	1;30	0,05	0,12	1,82	1;24	0,19	0,07
Social initiative	11,92	1;30	<0,01	0,28	0,79	1;24	0,38	0,03

Table 12

Results of the repeated measures analyzes of variance for observed engagement.

		Without control variables				With control variables			
		F	df	p-value	η_p^2	F	df	p-value	η_p^2
Observed engagement	m1 vs m3	13,15	1;30	<0,01	0,30	0,54	1;24	0,47	0,02
Observed engagement	m1 vs m2	30,22	1;29	<0,01	0,51	4,76	1;23	0,04	0,17
Observed engagement	m2 vs m3	5,55	1;29	0,03	0,16	2,82	1;23	0,11	0,11

Note. ml (pretest), m2 (during a FoK/I activity) and m3 (posttest).

measurement. The effect of the difference is large ($\eta_p^2 > 0.14$).

3.2.2. Results per school

Besides the overall analysis for both School A and B together (reported in Section 3.2.1), analyses per school were conducted (see Appendix 1). The results were comparable with the overall analyses: positive significant effects of the interventions at school A or B on students' engagement were found, however, only without controlling for background variables.

3.3. Outcomes of qualitative analysis

3.3.1. Students' engagement and motivation

Consistent with the quantitative results, all participating teachers reported during the interviews that they experienced higher student engagement and intrinsic motivation during the FoI activities than in other lessons. The teachers of school B also noticed a difference in students' motivation and engagement for the lessons in general. A teacher formulated this as follows: "*But I do notice a difference between then and now. […] I think they try a little harder, that they are a bit more motivated.*" Most students found it too difficult (due to language barriers or because of their young age) to reflect during the interviews on the extent to which the FoK/I activities had changed their engagement and motivation.

3.3.2. Students' well-being at school

Teachers of school A and B indicated that individual students felt more at ease and dared to share more in the classroom by the intervention which could possibly have an effect on their well-being. According to these teachers, this result applies in particular to students who normally do not dare to share much in the classroom, which was stated as follows: "*[I think] children who are normally very quiet and now dare to say something, that that is very nice.*" A teacher from school B noticed that at the end of the intervention the students felt more at ease in the classroom than before: "*[…] That they do feel free to make a comparison or to give input or to say things at all. So then you notice that they just feel at ease.*" This teacher also commented: "*I must say that I actually have seen them [the students] smile more often, during the lessons as well. Also because they work more together now.*"

The teachers from both schools indicated to experience an improvement in students' well-being in relation to peers. All teachers noticed that their students showed a lot of interest in each other during funds activities. One of the teachers indicated:

> … you just have those moments [during funds activities] when everyone listens carefully to each other and is also interested in everyone's self-portrait and clay artwork. So it is that whole interest in each other and listening to each other, that is there. I think that adds to the atmosphere.

The students indicated to enjoy discovering interests of fellow students during the intervention. For example, a student from school A answered the question in what way the assignments had helped as follows: "*Well, it helps to learn who everyone is.*"

The teachers of school A did not experience a major change in well-being in relation to the teacher as a result of the FoK/I approach. The reason they gave is that their relationship with the students was also good prior to the intervention. However, they indicated that they learned more about the students. For example, one of the teachers stated: *"…the children are enthusiastic and I also have the idea that I do indeed know a lot more about the children."* The teachers of school B indicated that they did experience a positive change during the intervention period in the well-being of students in relation to the teacher. They indicated that they had learned more about their students and noticed that the students liked this.

Students at both schools indicated that the teachers got to know them a little better through the FoI activities. However, several students from school A also indicated that the teacher already knew a lot about them before the intervention period. A number of students who said that the teacher had learned more about them said that they liked this. For example, a student from school B stated: *"Maybe she [the teacher] doesn't know all the things I love. And if I write that in my diary she will know and that is nice."*

3.3.3. Social initiative

In line with the quantitative outcomes, an increase in social initiative was noted during the interviews by the teachers. The teachers from both schools indicated that students talked and played with each other more often due to the intervention. For example, a teacher from School A indicated:

> You get to know each other better and then you think 'oh so that's why he acts like this, or oh he likes the same as me, maybe we can meet up sometime'. I got the idea that for example, it was about painting and that someone said 'oh you also like painting, shall we go painting together sometime?'

Furthermore, the teachers noticed an increase in students' own input trough the lessons. The students at school B asked more questions and came up with their own initiatives, not only during FoI activities but also during other lessons. One of the teachers wrote about this in the logbook: "*The students dare to give input during the lessons and also give ideas for activities. This gives me the idea that they dare to show more of themselves and take initiative.*" A teacher from school A indicated that a number of students who normally do not dare to share started to do so during the intervention: "*I do notice that a few children were now giving a kind of whole presentation about themselves while they normally never speak up. And the other children were very enthusiastic about that too. So I really liked that.*"

The students also indicated to provide more input during the lessons. For example, a student from school A said: "*Look, you should never come up with something yourself when doing crafts, because then the teacher will make it up for you, but if you do this [funds activity] you can make something yourself and you can tell why it suits you.*" A student from school B stated: "*I thought it was a very nice assignment, because it is my own opinion and then I can say what I think is important.*"

3.3.4. Self-efficacy

The teachers of school B experienced improvements in students' self-efficacy. For example, the teacher who had started using the home language of students as part of the funds approach indicated:

> I notice that it fits better with what she already knows, or her own language and that she can remember it better. So conclusion: That gives her more confidence, because she is quite insecure, and if she thinks in that way I can remember a word well because I know my own language very well and then I can apply it, then yes…

Because the teacher matched the lessons to what this student already knew (her home language), the confidence in this students' own ability and to Dutch vocabulary seems to have expanded. The teachers of school A indicated that they did not experience any influence of the FoI intervention on students' self-efficacy.

Most students were unable (due to language barriers or because of their young age) to reflect during the interviews on possible changes in their self-efficacy, however, a few students, said that their confidence in their own abilities had not changed as a result of the funds activities, because they already experienced a sense of competence before the intervention. However, a number of students did indicate that they felt proud during the funds activities. For example, when asked how she felt while presenting to other children what is important to her, one of the students answered: "*Good. I like it and I feel proud that I just did it.*"

4. Conclusion and discussion

Teachers in urban environments are confronted with increasing diversity in their classrooms. Diversity in socio-cultural backgrounds of students can result in inequality, when discontinuity between schools and home results in children being less engaged with school and performing below their capacities. The theories of funds of knowledge (FoK) and funds of identity (FoI) make a plea for teaching that draws on the knowledge, skills and experiences that students acquire outside of school (for instance in their families) and that might not be recognized by teachers, when these are from other socio-cultural backgrounds than their students (Volman & 't Gilde, 2021). A better connection between home and school can make students from other (cultural) backgrounds than the dominant culture feel more seen at school and therefore become more involved in the lessons (Bronkhorst & Akkerman, 2016; Vedder et al., 2006).

The aim of this study was to investigate whether interventions based on FoI theory, by bridging the gap between school and home, can contribute to well-being related outcomes, which are important for the realization of more equitable educational outcomes. Research into equal opportunities usually has a focus on educational achievement of students from a minority and lower-SES background. This can result in limited attention for students' own initiatives and their FoI, which can in turn have a negative impact on well-being related outcomes, such as engagement, self-efficacy and motivation for learning. A FoI approach takes these well-being related outcomes into account and considers them not only as important for learning, but also as important in themselves. A FoI approach has

indeed been suggested to positively contribute to well-being-related outcomes (Volman & 't Gilde, 2021). When students' FoI are addressed in the classroom, students felt more seen and valued at school, which in turn lead to higher involvement of students in the lessons, and in the end to better achievement. This study focused on well-being-related outcomes which are both conditional for educational achievement and important aspects of students' development in themselves. More specifically, the study provides insight in the (perceived) effects of two different FOI interventions on students' motivation for learning, engagement, well-being, social initiative, and self-efficacy.

For this study, teachers from two (Dutch) urban primary schools applied two different FoI interventions in their classrooms. At one school (A) the teachers applied a well-defined FoI intervention. They used assignments that let the students make identity artefacts, which served as mediating resources that allowed the teacher to link learning experiences from within and outside the school context (Esteban-Guitart, 2016; Subero et al., 2017). The assignments were designed in advance and described in so-called 'intervention cards' based on the six forms of FoI that were distinguished by Esteban-Guitart (2012, 2021a) and Poole and Huang (2018). At the other school (B), teachers applied a more flexible FoI intervention that was not fully designed in advance. Here, teachers were focused on making use of students' spontaneous initiatives and input in the classroom.

4.1. The (perceived) effects of FoI interventions

Although several positive effects of a funds approach for students' development were assumed in previous research, little empirical evidence existed so far to support these claims (Hogg & Volman, 2020). The present study was one of the first mapping positive effects based on not only qualitative, but also quantitative data (by systematic observations and teacher questionnaires). The study showed significant improvement of students' engagement (both observed and as perceived by the teacher) in both interventions during the FoI-activities, and social initiative (as perceived by the teacher) in the intervention of school B. In addition, in both schools, significant higher levels of students' engagement were found during intervention activities compared to similar educational activities in which teachers did not draw on students' FoI. The fact that in this study, with a small sample size, positive significant results were found is a strong indication that FoI interventions yield positive effects for students. The small sample size can also be the reason that significant effects disappeared when background characteristics were controlled for, because the degrees of freedom become even smaller when background characteristics are controlled for. During the interviews and in the logbooks, teachers and students of both schools also reported positive outcomes of the interventions on students' engagement, motivation for learning and school well-being. In school B, teachers also reported positive outcomes on social initiative and self-efficacy. The results underline the value of FoI interventions for students' development.

The positive influence of the FoI interventions on students' engagement is an important outcome, because higher levels of student engagement have been found to lead to better learning performance (Finn, 1989; Finn & Rock, 1997; Newmann, 1992). In this study, an increase in students' engagement was found not only during FoI activities, but also in subsequent educational activities in which teachers did not draw on students' FoI. Thus, the positive effect of the FoI interventions on students' involvement extended to other educational activities.

Teachers in this study did also report a positive contribution of the FoI interventions to students' school well-being, which has previously been found to have a positive effect on performance and motivation (Van Petegem et al., 2007). Teachers and students indicated that they got to know each other better during the FoI interventions. This may have led to stronger social relationships, which in turn may contribute to school well-being, engagement and motivation for learning (Roorda et al., 2017; Fredricks et al., 2004). Several students also experienced an increase in self-efficacy.

The teachers indicated that the FoI interventions made a difference in particular for students who were normally less seen at school; these students felt more at ease at school as a result of the interventions. This was in particular the case for vulnerable students, e.g. children from low socio-economic and/or a multilingual background (Agirdag & Kambel, 2018). This finding is in line with the finding of Ordoñez et al. (2021) that a funds approach seems especially useful "in cases where the learner carries the label of 'students at risk of social exclusion', and the effect this can have on them at the emotional level and for their self-esteem" (p. 1268).

Thus in both schools positive outcomes of the FoI interventions were identified. However, in school B a significant outcome of the intervention on social initiative was found, which was not found in school A. A possible explanation for this difference could lie in the school context: School B was a school for newcomers, where students had only been in their class for a few weeks. School A was a regular school where most students had already been for a longer period of time (from kindergarten) and who were therefore familiar with the school. In school A, teachers indicated that the students already took a lot of initiative in the classroom before the intervention period. There may have been little room for improvement. In school B, however, students were new, and not familiar with the teacher, school and the Dutch language. So, there may have been more room for improvement in school B compared to school A. According to the teachers from school B, students' motivation for learning and well-being increased by the intervention and with that also their engagement. Another difference between the interventions that may explain the difference in outcomes is that, according to the teachers of school B, the funds approach suited their educational approach well, which made it relatively easy to apply the FoI intervention.

This study shows that an educational approach in which there is room for teachers' own input in the curriculum is helpful in implementing a funds approach. Previous research has already shown that strictly following the textbook (instead of teachers having their own input) can hinder working with FoI approaches ('t Gilde & Volman, 2020). Furthermore, in this study, a connection with the FoI approach to the regular way of working in the school was experienced by teachers to be a promoting factor. For instance, in the school where the funds approach fitted in well with the school's regular method of vocabulary teaching (school B), the teachers experienced the intervention as a natural way of teaching and not as an extra task (as in school A).

4.2. Limitations and future research

Due to the school closures during the COVID-19 pandemic, the intervention period in this study (of six weeks) was shorter than originally planned. Furthermore, there was no comparison group (control condition). Since the positive outcomes of the quantitative analyses were confirmed by the interviews (in which the teachers reported a positive influence of the funds approaches on students' engagement), there is no reason to assume that the effects can be attributed to other factors than the intervention. Also, the small size of the study made it impossible to investigate variations in results for specific groups of students. More research is needed on a larger scale, with an experimental and control group, and with longer intervention periods, to investigate whether funds approaches can really contribute to promoting educational equality. Future research could zoom in on the effect of funds approaches on certain groups of vulnerable students.

Furthermore, we did not take the notion of 'invisible funds of identity' into account in our study. Esteban-Guitart (in press) recently introduced this concept to address people's unconscious beliefs that can include negative hegemonic-dominant discourses such as racism, discrimination, or colonialism (Esteban-Guitart, in press). He suggests that with a critical pedagogical approach, teachers can attempt to dismantle these dominant discourses and practices and initiate a process of awareness and change in students. The concept of invisible funds of identity is a relevant focus for future research.

Despite these limitations, this study provides insight into the (perceived) effects of funds approaches. The results show that funds approaches have the potential to contribute to students' engagement, and to other well-being related variables, which are both conditional for educational achievement and important aspects of students' development in themselves. In addition, this study shows how concrete funds approaches can be applied in the classroom in different contexts. The study therefore may serve as an example for other schools and teachers who want to make use of students' FoI in order to ensure that all students develop academically and socially.

Funding details

Declaration of competing interest

None.

Appendix 1. Descriptive statistics and outcomes of analysis of variance for repeated measures per school

Descriptive statistics per school
School A

Table A1
Averages on the questionnaire scales for school A ($N = 16$).

	Measurement 1		Measurement 2	
	M	s.d.	M	s.d.
Engagement	3,13	0,59	3,33	0,57
School well-being	3,42	0,51	3,56	0,41
Social initiative	3,34	0,65	3,48	0,73

Table A2
Averages for observed engagement for school A.

	Measurement 1			Measurement 2			Measurement 3		
	M	s.d.	N	M	s.d.	N	M	s.d.	N
Observed engagement	3,71	0,63	16	4,17	0,44	15	3,88	0,69	16

School B

Table A3
Averages on the questionnaire scales for school B ($N = 15$).

	Measurement 1		Measurement 2	
	M	s.d.	M	s.d.
Engagement	2,97	0,55	3,25	0,47
School well-being	3,17	0,51	3,32	0,41
Social initiative	2,88	0,65	3,25	0,61

Table A4

Averages for observed engagement for school B.

	Measurement 1			Measurement 2			Measurement 3		
	M	s.d.	N	M	s.d.	N	M	s.d.	N
Observed engagement	3,13	0,66	16	4,11	0,52	15	3,92	0,29	16

Outcomes of analysis of variance for repeated measures per school

School A

Table A5

Results of the repeated measures analyses of variance for the questionnaire scales for school A.

	Without control variables				With control variables			
	F	df	p-value	η_p^2	F	df	p-value	η_p^2
Engagement	4,88	1;15	0,04	0,25	0,11	1;10	0,75	0,01
School well-being	2,54	1;15	0,13	0,14	0,76	1;10	0,40	0,07
Social initiative	3,17	1;15	0,10	0,17	2,23	1;10	0,17	0,18

Table A6

Results of the repeated measures analyses of variance for observed engagement for school A.

		Without control variables				With control variables			
		F	df	p-value	η_p^2	F	df	p-value	η_p^2
Observed engagement	m1 vs m3	0,89	1;15	0,36	0,06	0,24	1;10	0,63	0,02
Observed engagement	m1 vs m2	9,44	1;14	<0,01	0,40	0,64	1;9	0,44	0,07
Observed engagement	m2 vs m3	3,48	1;14	0,08	0,20	2,40	1;9	0,16	0,21

Table A7

Results of the repeated measures analyses of variance for the questionnaire scales for school B.

	Without control variables				With control variables			
	F	df	p-value	η_p^2	F	df	p-value	η_p^2
Engagement	17,14	1;14	<0,01	0,55	0,99	1;11	0,34	0,08
School well-being	1,66	1;14	0,22	0,11	1,27	1;11	0,28	0,10
Social initiative	9,46	1;14	<0,01	0,40	0,30	1;11	0,59	0,03

Table A8

Results of the repeated measures analyses of variance for observed engagement of school B.

		Without control variables				With control variables			
		F	df	p-value	η_p^2	F	df	p-value	η_p^2
Observed engagement	m1 vs m3	26,29	1;15	<0,01	0,65	1,49	1;11	0,25	0,12
Observed engagement	m1 vs m2	24,44	1;15	<0,01	0,64	1,89	1;11	0,20	0,15
Observed engagement	m2 vs m3	1,99	1;15	0,18	0,12	0,19	1;11	0,67	0,02

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