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Opening up towards children’s languages: enhancing teachers’ tolerant practices towards multilingualism

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**ABSTRACT**

Mainstream teachers struggle with linguistic diversity, often leading to restricting multilingualism. Scientific research, however, recommends including pupils’ home languages in school. Various qualitative studies have evaluated implementations in schools and indicated possibilities for improving teachers’ attitudes towards multilingualism. This paper evaluates an experimental implementation targeting an increase in tolerance towards multilingualism. The implementation was facilitated by external school coaches and consisted of 3 experimental tools affecting the school. Data originated from 62 Flemish primary schools (of which half were experimental schools) that participated in 3 survey waves (2012 and 2014; 763 teachers completed both waves). We used multilevel regression. We concluded that the implementation leads to higher rates of tolerance. The fulfilment of the basic conditions needed for a successful change was important, and the linguistic diversity of the pupil population and the investment by external school coaches did not affect the tolerant practices of teachers towards multilingualism.

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**Introduction**

Societies have become increasingly diverse due to migration (Vertovec, 2007). This has caused pupil populations in schools around the world to become more linguistically diverse. A growing proportion of pupils use a different language at home than the schools use for instruction.

Teachers wonder how to react to pupils who use a different home language in their classrooms (Agirdag, 2009; Coleman, 2010) and often try to avoid allowing pupils to use languages other than the language used at the school (e.g., Gogolin, 2002). Scientific research, however, advocates the integration of pupils’ home languages into the learning process to enhance pupils’ wellbeing and achievement (e.g., Garcia, 2009).

Researchers have worked together with schools to change teachers’ practices towards multilingualism (e.g., Blondin & Mattar, 2004; Ramaut, Sierens, & Bultynck, 2013; Verhelst & Verheyden, 2003) and have evaluated educational implementations that target teachers’ tolerance towards multilingualism. In these studies, however, small-scale qualitative methodologies were mainly used: Small-scale observations and interviews were conducted, or teachers assessed implementations retrospectively. Sporadically, quantitative data were gathered, albeit on a rather small scale (Ramaut et al., 2013). These studies have contributed to the description of implementation processes and have even brought subtle changes to light, indicating the possibility of improving teachers’ attitudes towards multilingualism through educational innovation projects.
In this article, we look at the Validiv project (Valorising Linguistic Diversity in Multiple Contexts of Primary Education), an educational innovation that aims to change how teachers deal with multilingualism in primary schools, and evaluate it using large-scale quantitative methodology. The innovation consisted of three experimental tools that affected the school as a whole: Teachers used a multilingual electronic tool in science class (the fourth and fifth grades only); they obtained inspiration on how to utilize pupils’ multilingualism for learning; and their schools were involved in a language policy trajectory. This article focuses on the question of whether teachers’ practices in the classroom changed significantly due to the Validiv project. Not only will we examine the effect of the project as a whole, but we will also discuss the effects of some specific aspects of the implementation process on the school level.

This study is part of the larger project Validiv. Validiv was significant in the Flemish education context. For the first time, a large-scale multi-method study was conducted in Flanders. Having a multidisciplinary research team allowed us to analyse and interpret the research findings from different perspectives. In this specific study, we aimed at integrating school effectiveness research and sociolinguistic research on multilingualism in education. Moreover, this study was unique in using large-scale quantitative data, including a pre- and posttest, and control schools (for an exception, see Ramaut et al., 2013).

**Theoretical framework**

*Opening up towards children’s languages: why is it important?*

Migration and globalization cause societies to become more diverse. Migrants come from a multiplicity of countries and bring a wide range of languages with them. This tendency is seen not only in Europe (e.g., Duarte, 2011; Gogolin, 2002, for Germany; e.g., Vertovec, 2007, for the United Kingdom) but also in the USA (e.g., Byrnes, Kiger, & Manning, 1997). In Flanders, more than 16% of the pupils in primary education speak a language other than Dutch at home, and this proportion is still increasing (Crevits, 2015).

Teachers often wonder how to handle the linguistic diversity pupils bring to school (Agirdag, 2009; Coleman, 2010; Johnson, 2012; Sierens & Van Avermaet, 2014). Many teachers think that dealing with diversity is difficult (Dooly, 2005). They feel generally unprepared to teach multilingual pupils (Coleman, 2010; Johnson, 2012). Therefore, they rely upon common-sense beliefs about multilingualism, namely, that the best way to learn a language is through submersion; this is identical to how people acquire their first language (Cummins, 2008; Sierens & Van Avermaet, 2014). This leaves no room for the other languages of multilingual pupils and leads to the suppression of all linguistic diversity in classrooms (Gogolin, 2002; McLaughlin, 1992). Ramaut and Sierens (2011) observed that the home language of pupils was banned from classrooms and that teachers focused on maximum exposure to the dominant language. Teachers believe that every second should be invested in pupils’ acquisition of the dominant language (Van den Branden & Verhelst, 2007).

Sociolinguistic research, however, has shown how multilingual children use their linguistic repertoires in a natural, integrated way (e.g., Jørgensen, 2005). Although they might be studying in monolingual contexts, this does not necessarily mean that they think, and thus learn, monolingually (Busch, 2010). Since the ideology of multilingualism in terms of parallel monolingualisms is powerful in many schools, practices of translanguageing are often seen as a deficit (Heller, 1999). These insights about how multilingualism works have caused scholars like García (2009) and Cummins (2001) to theorize about integrating pupils’ multilingual realities in education. Including pupils’ home languages in the schools might enhance both their wellbeing and achievement. As Cummins (2001) said, “To reject a child’s language in the school is to reject the child” (p. 19). Pupils may feel uncomfortable or demotivated when their language, part of their identity, is pointed to as a cause of failure in school (Cummins, 2001). Multilingual pupils are often told to
concentrate on the dominant language; their home languages are portrayed as barriers to success in school (Agirdag, 2009; Van den Branden & Verhelst, 2007). In this discourse, emphasis is placed on pupils’ weaknesses, resulting in pupils’ impression that teachers do not believe in them, which lowers multilingual pupils’ sense of wellbeing. In schools where teachers take a more tolerant stance towards multilingualism, pupils have a stronger sense of school belonging (Van Der Wildt, Van Avermaet, & Van Houtte, 2015) and more self-confidence than pupils in other schools (Ramaut et al., 2013).

A more welcoming stance towards multilingualism may also benefit pupils’ academic achievement since it might better fit the learning process of multilingual pupils (Cummins, 2008; García, 2013; Jørgensen, 2005). The integrated use of linguistic repertoires is more natural for multilingual pupils (e.g., Jørgensen, 2005) and might thus result in more robust learning. García (2013) argues that different languages are used simultaneously in the multilingual mind, and she therefore advocates the integrated use of the multilingual repertoires of pupils in the classroom. Similarly, Cummins (2008) states that separating out the languages of multilingual pupils is counterproductive for learning purposes. Sierens and Van Avermaet (2014) apply and translate these ideas to schools where pupils bring a wide variety of home languages to the classroom.

Various innovative projects specifically aim at including multilingualism in schools (e.g., Maraillet, 2005; Saudan et al., 2005). Projects focusing on language awareness generally show that teachers report the projects’ effectiveness (e.g., Fidler, 2006). Teachers confirm that the projects stimulate pupils’ curiosity about languages and promote pupils’ positive attitudes towards other cultures (Blondin & Mattar, 2004; Fidler, 2006). Other projects focus on using multilingualism in pupils’ learning process (e.g., Bourne, 2001; Ramaut et al., 2013; Sierens & Van Avermaet, in press). These projects demonstrate their power to influence teachers’ beliefs and classroom practices. In Flanders, the Home Languages in Education Project (Ramaut et al., 2013) reports that in control schools, 10 out of 35 teachers did not allow other languages to be used in the classroom, while in schools that had participated in the project, all teachers allowed other languages. As far as the methodology for studying teachers’ behaviour in these projects is concerned, researchers have mainly focused on qualitative methodologies, such as observations (Bourne, 2003; Maraillet, 2005; Ramaut et al., 2013), teachers’ diaries (Fidler, 2006; Saudan et al., 2005), and interviews (Ramaut et al., 2013). Some projects have also included quantitative results, but samples are mostly small, providing insufficient statistical power for an analysis of school effects (e.g., Blondin & Mattar, 2004). Generally, no control schools or pretests are included (for an exception, see Ramaut et al., 2013).

**Tolerant practices towards multilingualism: differences between teachers and schools**

Both the experiences of individual teachers and the characteristics of schools may influence the way teachers handle multilingualism in their classrooms.

Former research has suggested several predictive individual teacher characteristics for tolerant practices towards multilingualism: gender, grade level, socioeconomic status (SES), and experience. Female teachers tend to show a more positive attitude towards multilingualism than male teachers (Youngs & Youngs, 2001); they might therefore show more tolerance towards multilingualism in their classroom practices than their male counterparts. Teaching a particular grade level can influence tolerant practices towards multilingualism. The Flemish Home Languages in Education Project (Ramaut et al., 2013) found that kindergarten teachers consistently tolerated the usage of home languages more than primary school teachers. Teachers with higher socioeconomic status were found to have more positive language attitudes compared to teachers of lower socioeconomic status (Byrnes et al., 1997), and this might, as a consequence, affect teachers’ tolerant practices. Research demonstrated that more experienced teachers exhibit less positive attitudes towards minority pupils and instructional innovations than less experienced teachers (e.g., see Agirdag, Loobuyck, & Van Houtte, 2012, for attitudes towards Muslim pupils; see Ghaith & Yaghi,
1997, for attitudes towards implementing new instructional practices); similar processes might be described where tolerant practices towards multilingualism are concerned.

Working in the same school may therefore lead teachers to adopt a similar stance towards multilingualism in their teaching practices (Van Der Wildt et al., 2015). Differences between schools, however, do exist: An aggregated measure on school levels resulted in a school mean of 2.23 (SD = 0.63), which indicates that, on average, teachers seldom allow home languages to be used in the classrooms. Most schools involved in the study (Van Der Wildt et al., 2015) did have an official monolingual policy. However, schools differ in how the policy was put into practice. Independent of the monolingual policy, some schools showed leniency when children used other languages on the playground or in the corridors than that advocated by the school, but were strict about using the dominant language in the classroom. In other schools, the opposite was observed: a strict monolingual policy on the playground and in the corridors, but a more tolerant policy in terms of classroom interaction. In some schools, overt multilingual practices initiated by the teacher could be observed; in others, teachers overtly adhered to the monolingual school policy and expressed this frequently to the children, while at the same time, on certain occasions and in a more covert way, allowed children to exploit their mother tongue in classroom interaction.

More experience with a diverse pupil population seems to help teachers to cope with challenges resulting from linguistic diversity. Various studies have found that teachers’ exposure to diversity has a positive impact on attitudes towards diversity at school (Pohan, Ward, Kouzekanani, & Boatright, 2009). Youngs and Youngs (2001) found a positive effect of diversity in contact with multilingual pupils on teachers’ attitudes. Teachers working with diverse pupil populations tend to have more positive attitudes than teachers without as much contact and familiarity with multicultural and ethnic diversity. Youngs and Youngs’ research, however, focused on teachers’ attitudes; this article focuses on tolerant practices towards multilingualism as reported by teachers. Qualitative observations in diverse classrooms show a strong monolingual ideology in teaching practices (Cekaite & Evaldsson, 2008; Gogolin, 2002), although teachers do allow multilingualism on rare occasions, and in rather small amounts in groups with diverse linguistic backgrounds (Cekaite & Evaldsson, 2008; Lee, Lewis, Adamson, Maerten-Rivera, & Secada, 2007).

There is, thus, tension between teachers’ strong emphasis on the use of the dominant language as the language of instruction and the positive effects of linguistic diversity on language attitudes. This tension could be explained by Bourdieu’s concepts of interiorization and exteriorization (Bourdieu, 1989). Teachers might exteriorize ideologies in the field of the school that they interiorize from elsewhere. Teachers are exposed to influences at macro-, meso-, and microlevels (Ricento & Hornberger, 1996). At the macrolevel, mainstream language ideologies influence how teachers manage pupils’ multilingualism. Pulinx, Van Avermaet, and Agirdag (2015) found that as many as 77% of Flemish teachers agreed that non-Dutch-speaking pupils should not be allowed to speak their home language at school, a belief that strongly mirrors the ideology of the Flemish government. Nevertheless, this leaves 23% of the teachers who do not completely comply with the official policy (Pulinx et al., 2015). On the mesolevel, schools can influence teachers through different school visions and teacher-team characteristics, such as language ideologies expressed by teacher colleagues (Ricento & Hornberger, 1996). Teachers in very mixed schools may also be affected by extra training about diversity often provided by these schools (Tatar & Horenczyk, 2003). Therefore, it might be that teachers in more diverse schools think more positively about multilingualism. At the microlevel, every teacher brings different life experiences to school (Ricento & Hornberger, 1996). Some teachers have experience with multilingualism in their own homes; others do not. The perspective that teachers can be influenced by a large array of possible experiences clarifies why teachers should not be seen as being shaped entirely and exclusively by any one of these experiences; they always possess some leeway to oppose philosophies on both macro- and mesolevels (e.g., Shohamy, 2006). Some teachers might advocate a certain ideology (Shohamy, 2006), whereas others might oppose and/or change that ideology (Galdames & Gaete, 2010; Hélot, 2010; Menken & García, 2010). The contrast might even be seen as a continuum on
which teachers take a variety of positions: Research by Creese and Blackledge (2011) has noted that teachers might explicitly express beliefs about separate bilingualism in their discourse, but this does not always match their teaching practices of flexible bilingualism. The link between ideology, a school’s point of view, and teachers’ beliefs and practices is thus not straightforward, and changing any of these aspects is always a difficult and complex process.

**School improvement: how to make schools change successfully**

Schools have a responsibility to adapt continuously to a constantly changing social environment/world/society. This entails regularly rethinking about what skills and knowledge should be offered in schools and how this can best be done.

School improvement research (SIR) focuses on the processes of change that schools go through to become more effective (Hopkins, 2001). Research shows that teachers’ mindset towards innovations is crucial for the implementation process to succeed (Fullan, 2001; Muijs et al., 2014). Changing their classroom practice often involves uncertainty and concerns on the part of teachers (Geijsel, Sleegers, Van den Berg, & Kelchtermans, 2001; Van den Berg & Ros, 1999). Just as pupils need a safe environment to ensure learning happens, teachers need support to move through processes of change and professional development (Harris, 2002). Schools have the power to provide this safe learning environment to facilitate improvements in classrooms. Three aspects of the school are important in this respect. The first aspect is leadership (Harris, 2002; Hopkins, 2001; House & McQuillan, 2005; Leithwood & Jantzi, 2006): A person who offers guidance should provide a balance of both support and high expectations (Stoll, Fink, & Earl, 2003). On the one hand, teachers need guidance and support as they work through a challenging process when innovating classroom practices. On the other hand, the leader should expect that teachers will continue to experiment and push their limits. Moreover, including teachers in decision making is beneficial for schools’ capacity for change (Muijs, Harris, Chapman, Stoll, & Russ, 2004). Second, some basic conditions need to be fulfilled concerning the atmosphere at school to encourage innovation in teachers. Teachers need an open and trusting work environment to gain confidence in experimenting in the classroom (Clement, Sleegers, & Vandenberghe, 1995; Harris, 2002; Hopkins, 2001). This can be established by using open communication, by encouraging positive collegial relations, and by providing teachers with professional development in their everyday environment (Harris, 2002; Hopkins, 2001; Stoll et al., 2003). A third important determining aspect for schools’ innovative power is the pupil population. Thrupp (1999) looked at schools with a challenging pupil population, a population with a high proportion of minority pupils, and a population of pupils from low socioeconomic backgrounds. Research shows that these schools need to invest a great deal of energy and time to ensure the conditions are right: monitoring truancy, providing pupils with the material resources they need, guaranteeing a minimum level of security, and motivating pupils (Muijs et al., 2004; Thrupp, 1999). The presence of these obstacles might prevent schools from implementing innovative classroom practices – they may simply lack the conditions to start.

Schools also differ in their readiness for reform and therefore require different strategies in order to change (Bellei, Vanni, Valenzuela, & Contreras, 2016; Slavin, 2005). Failing schools might need more external support to change than effective schools that want to remain effective (Hopkins & Harris, 1997). Slavin (2005) distinguishes between seed, brick, and sand schools. Seed schools are ideal for school improvement. Teachers have open minds, and in these schools, leaders launch many ideas and ensure a safe environment for teachers to experiment. In brick schools, teachers want to change but do not directly recognize the need. Change takes effort and time but will be sustained over time. School teams in sand schools are convinced they are already doing a good job. Therefore they will rapidly return to the original situation after implementing an educational innovation.
Research questions

This article evaluates whether the Validiv project (more information on the project can be found in the Methodology section) succeeded in enhancing teachers’ tolerant practices towards multilingualism. The first research question is whether the Validiv project changed teachers’ tolerant practices towards multilingualism. The research not only looks at differences between experimental and control schools, but at other factors that might facilitate or hinder the implementation. The literature indicated three important aspects in that respect: the schools’ pupil population (Pohan et al., 2009; Youngs & Youngs, 2001), an open and trusting working environment for teachers (Harris, 2002), and the presence of a supportive coach in the innovation process (Stoll et al., 2003). The second research question focuses on pupil populations in schools and asks to what extent the impact of the Validiv project on tolerant practices towards multilingualism is influenced by a linguistically diverse population. Third, we investigate whether teachers’ tolerant practices towards multilingualism were affected by the extent to which basic conditions for an innovative trajectory were met in their school. Finally, we pay attention to whether the investment by an external school coach influenced teachers’ tolerant practices towards multilingualism.

Methodology

The Validiv project: an innovative implementation aimed at influencing schools

The implementation that is at the centre of this article is called Validiv (Valorising Linguistic Diversity in Multiple Contexts of Primary Education). The Validiv innovation aimed to promote pupils’ learning processes by offering space for pupils’ home languages at school. The Validiv project was designed based on the notion of “functional multilingual learning” (Sierens & Van Avermaet, 2014). This notion states that pupils’ home languages can be utilized as didactic capital, as a scaffold for learning. Teachers can allow and encourage pupils to use their multilingualism for learning; they do not need to know every language that is spoken by their pupils. Pupils can learn by looking up information in their home language or interacting with peers who share their linguistic background.

As SIR (e.g., Hopkins, 2001) recommended, the Validiv project aimed to affect both the classroom context and the broader school environment. Three innovations were implemented. The first two were directed at the classroom level: E-Validiv was a multilingual electronic tool that could be used in fourth- and fifth-grade science classes. It enabled pupils to switch between Dutch and another language at their own pace in order to acquire new knowledge about science topics. The Validiv case collection, the second innovation, was an inspiring selection of tools that could be applied to everyday class situations. Teachers could select superficial or profound classroom changes, depending on their willingness to experiment. A third tool, the Validiv school policy guide, was intended to address coordinating figures at school, such as principals. The school policy guide was an instrument to screen and change the school policy regarding languages and engage the school’s approach towards multilingualism.

The introduction of the Validiv tools in the schools was supported by SIR principles (Guskey, 1988; Harris, 2002; Hopkins, 2001; Stoll et al., 2003). First, there was an introductory talk with the school team in which the Validiv tools were presented by the coach. School coaches were provided with a school-specific report on the overall score of a school based on data from the first measuring moment (T1). As indicated by SIR (Stoll et al., 2003), these numbers helped the school coach to point out schools’ growth potential. The school coaches thus aimed to motivate school teams to change. Afterwards, the Validiv school coaches assisted the schools in outlining an action plan. These action plans were particular to the school culture and to the challenges the school had to meet; these are important conditions to make the innovation trajectory work (Harris, 2002). For the implementation of E-Validiv, a somewhat uniform approach was used in the different schools. An
important aspect in this process was the balance between support and high expectations (Guskey, 1988). Teachers received a manual to facilitate the use of the electronic learning environment and were supported by contact persons when having technical or substantive questions. The answers were made available for all participating teachers through the “frequently asked questions” overview on the website. The external Validiv coaches were provided with information on the use of E-Validiv from different schools. In this way, they were able to find out what was troubling teachers, to remove uncertainties and to encourage teachers that had been less active in using the electronic learning environment. An external school coach also provided teachers with a critical friendship, since the coach was a person who was on their side, trying to help them in their teaching practices, while being honest and critical about their teaching behaviour (Hopkins, 2001).

Sample
Data were gathered from 67 primary schools in Flanders as part of the Validiv project. We conducted multistage sampling, which resulted in a non-representative sample that focused on schools in regions with a more linguistically diverse population. First, we selected three Flemish regions with linguistically diverse populations (Brussels, Ghent, and the mining region of Limburg), and then chose schools within these regions. Since schools are swamped with requests to participate in research, the response rate was rather low (31% of the initial sample agreed to participate). Schools in Flanders generally use a “first come, first served” practice, in which they decide which research to participate in on the basis of when they are invited and whether a commitment to a research team can be combined with the already existing workload. This resulted in a response that is unrelated to schools’ linguistic composition.

This study made use of data from two measurement moments from the same schools. The data from the earliest time point were gathered between October and December 2012 (hereafter referred to as T1). On the first time point, 67 schools participated, but during the course of the research project, several schools renounced or changed their commitment. Therefore, data from only 60 schools were included in the analyses for the second time point (T2). All teachers in the schools were invited to complete paper-and-pencil surveys, resulting in the participation of 1,255 teachers (75.4%) from 67 different schools. At T2, spring 2014, 1,000 teachers from 60 schools filled out the survey. Of those teachers, 763 had also filled out the first questionnaire, which meant there was a 39% attrition rate. Additional analyses (not shown) have pointed out no important differences between the teachers that filled out the questionnaire on T1 only and those who filled out both T1 and T2, which indicates attrition did not jeopardize the validity of this study. Due to missing data on the variables used in the analyses, data from only 528 teachers were used. We used listwise deletion in this step to be able to use the same sample of teachers throughout the models.

Measures
Dependent variable
Tolerant practices towards multilingualism were measured at both T1 and T2, with the measure at T2 being the dependent variable. We used a self-developed 4-item scale, and introduced the items by stating, “Every teacher has their own way of teaching. These statements deal with what you would tolerate or not if you were to teach pupils whose home language was not Dutch.” This was then followed by “Pupils are allowed to use a language other than Dutch…” with four situations to choose from: “to explain the content to another pupil”, “at the playground”, “during group work”, and “in the classroom”. The items were answered using Likert-like answering options: “never”, “almost never”, “sometimes”, “often”, and “very often”. Item correlation substitution was used for missing values (Huisman, 2000). We replaced missing values in an item by the value of the item correlating most highly with that item. This reduced missing values from 31% missing on at least one of the original items to about 10% of the items that were used for scale construction.
Confirmatory factor analysis showed that all items measure the same underlying concept; the scale’s Cronbach’s alpha was 0.86. In earlier research, we compared the reported practices of teachers to pupils’ perceptions and measured them by the same items, only we reformulated them from the point of view of the pupils (Van Der Wildt et al., 2015). Both reports correlated strongly ($r = 0.65$, $p < 0.01$), indicating that there was no important social desirability bias for this measure. On average, teachers scored 2.55 on a scale from 1 to 5 with a standard deviation of 0.99 (see Table 1). Higher values on this scale indicate more tolerant practices.

**School-level variables**

Linguistic diversity (T1) is measured using the Herfindahl index (Dronkers, 2010; Putnam, 2007) applied to linguistic composition by considering both the group size of every linguistic group present and the diversity in linguistic groups. The index is calculated using this formula: $-1 \times \left((\text{proportion linguistic group } 1)^2 + (\text{proportion linguistic group } 2)^2 + \ldots + (\text{proportion linguistic group } n)^2\right) + 1$. Values for this index range from 0 to 1, with a value of 0 indicating that only one home language is present at school. This could be Dutch or any other language. A value of 1 indicates that every pupil uses a different language at home. The average linguistic diversity in this study is 0.4 with a standard deviation of 0.21 (Table 1).

A dichotomous variable indicates whether a teacher is part of a school in the control or project condition. In the study, 27 schools participated as project schools, while another 33 schools participated in the control condition (see Table 1).

Since the remaining school-level variables are only applicable for schools in the project condition, the average and standard deviation of these variables are based on data of teachers in those schools only (see Table 1). The first of these conditionally relevant variables focuses on the extent to which an external school coach believes a school has met the basic conditions for a fruitful innovative process to occur. The external school coaches were provided with five hypothetical situations and assigned the most comparable situation to each school. For instance, a school could be compared to the following scenario: “A school was not ready for a trajectory of innovation. The school needed to sort out some other problems first, before the project could actually start.” The measure of meeting the basic conditions for innovation goes from 1 (indicating that the school did not meet the basic conditions) to 5 (indicating that the school convincingly met the conditions) with an average of 3.15 and a standard deviation of 1.38 (see Table 1). A second conditionally relevant variable indicated the energy and time an external school coach invested in the coaching process in every school. This measure made use of hypothetical situations as well. The measure of investment by the external school coach goes from 1 (no investment) to 5 (a large investment) with an average of 3.39 and a standard deviation of 1.29 (see Table 1).

### Table 1. Descriptive statistics for dependent and independent variables: frequencies (%), means, and standard deviations.

<table>
<thead>
<tr>
<th></th>
<th>Mean (SD) or %</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Teacher level</strong></td>
<td></td>
</tr>
<tr>
<td>Tolerant practices towards multilingualism (T2) (range:1–5)</td>
<td>2.55 (0.99)</td>
</tr>
<tr>
<td>Tolerant practices towards multilingualism (T1) (range:1–5)</td>
<td>2.22 (0.99)</td>
</tr>
<tr>
<td>Gender (reference category: men)</td>
<td>86%</td>
</tr>
<tr>
<td>Grade (reference category: primary school)</td>
<td></td>
</tr>
<tr>
<td>Kindergarten teacher</td>
<td>28%</td>
</tr>
<tr>
<td>Support teacher</td>
<td>15%</td>
</tr>
<tr>
<td>Other teacher</td>
<td>8%</td>
</tr>
<tr>
<td>Experience (range: 0–49)</td>
<td>14.58 (9.72)</td>
</tr>
<tr>
<td>SES (range: 11–89)</td>
<td>51.73 (19.51)</td>
</tr>
<tr>
<td><strong>School level</strong></td>
<td></td>
</tr>
<tr>
<td>Dummy project condition (reference category: control)</td>
<td>45%</td>
</tr>
<tr>
<td>Linguistic diversity (range 0.15–0.88)</td>
<td>0.4 (0.21)</td>
</tr>
<tr>
<td>Meeting basic conditions for innovation (range 1–5)</td>
<td>3.15 (1.38)</td>
</tr>
<tr>
<td>Investment by external school coach (range 1–5)</td>
<td>3.39 (1.29)</td>
</tr>
</tbody>
</table>
**Teacher-level variables**

Five measures on the teacher level were included: tolerant practices towards multilingualism at T2, gender, grade, experience, and SES, the latter measured at T1.

The original level of tolerant practices towards multilingualism was measured at T1 in teachers using the same 4-item scale as at T2 (see above for an explanation on the dependent variable). On T1, teachers scored, on average, 2.22 with a standard deviation of 1 (see Table 1).

The sample consisted of 454 women (86%) and 74 men (14%). Of the teachers, 49% taught in primary school, which was used as reference category; 28% were kindergarten teachers; 15% were support teachers who provided extra support for pupils with difficulties in learning (e.g., concentration problems or dyslexia) or who provided academically strong pupils with extra challenges, in pull-out classes or in the mainstream classroom; and 8% belonged to the category of “other teachers”. This category consisted mainly of sports and religion teachers. The teachers in the sample averaged 14.58 years of experience with a standard deviation of 9.72. We used the International Standard Classification of Occupations to construct an International Socio-Economic Index of Occupational Status scale to quantify the SES of teachers (Ganzeboom & Treiman, 2013). Teachers in this sample had an average SES of 52 with a standard deviation of 19.51.

**Research design**

Since teachers were nested in schools, and we included variables of teacher level and school level in the analyses, we used multilevel regression in MLwiN 2.16. We started by estimating the unconditional model to determine the variance of tolerant practices towards multilingualism (T2) situated at the school level (Model 1). Then, we included the dummy variable indicating the condition of schools (Model 2). In this way, we could distinguish between the tolerant practices towards multilingualism in schools that were in the project or the control condition. In the third model, we included a measure for linguistic diversity in the pupil populations, and then we inserted an interaction term between this measure and the condition of schools (Model 4). As Thrupp (1999) noted, it might be that the implementation of innovations is harder in schools where the pupil population is perceived as challenging.

For schools in the project condition, two variables were included in the model that focused specifically on the way the project was implemented. Clearly, these could not be measured for teachers in the control condition. Therefore, they were included as interaction terms with the dummy variable indicating the condition of schools, without main effects: Obviously, these effects can only be estimated for experimental schools. For a detailed explanation of this technique, see Ross and Mirowsky (1992). We included a measure indicating the extent to which the basic conditions for an innovative trajectory were met in a school according to the external school coach (Model 5), and an indication of the time and energy invested by the external school coach while coaching the school (Model 6). After looking at the effects of the conditionally relevant variables separately (Models 5 and 6), we added them together to control for correlation between both of them (Model 7). Next, four control variables (T1) were added to the model: gender, grade level, experience, and SES. We could thus estimate the differences in tolerant practices between teachers with different backgrounds (Model 8) in gender, grade level, and teacher SES. Then, we controlled teachers’ tolerant practices for tolerant practices towards multilingualism at T1 (Model 9); as shown in Ramaut and colleagues’ (2013) research, teachers who handled multilingualism in a more positive way before starting the implementation showed greater development in these practices than teachers who were not familiar with including multilingualism at the start of the implementation. In the final model, Model 10, we excluded the conditionally relevant variables from the model to be able to see the effect of the condition of schools controlled for the teacher-level variables.
**Results**

The analyses showed that at the end of the project, teachers working in experimental schools tolerated multilingualism more than teachers in control schools (Table 2, Model 2). This effect remained significant when adding the linguistic diversity of the pupil population to the model (Table 2, Model 3). The answer to the first research question is therefore affirmative. In Models 4 through 8, we were not able to assess the importance of the variable of condition anymore, as this was the effect of the condition if the value on the included conditionally relevant variables was 0 (see also Ross & Mirowsky, 1992). For example, in Model 5, the coefficient of the variable of condition showed the effect of the experimental condition for schools that scored 0 on the basic conditions for innovation. We estimated the effect of the experimental condition again, with all the control variables on the teacher level, without the conditionally relevant variables, and this analysis showed that the effect of the experimental condition still held when controlled for teacher characteristics (Table 2, Model 10).

The second research question focused on whether the effect of the condition varied between schools differing in linguistically diverse pupil populations. Since the interaction term of linguistic diversity and condition did not become significant (Model 4), we concluded that the tolerant practices of teachers did not depend on the linguistic diversity of the pupil population of their school.

The third research question concentrated on the basic conditions for innovation. In schools that did more to fulfil the basic conditions for innovation, in the judgment of the external school coaches, teachers were more tolerant towards multilingualism after the implementation of the Validiv innovation than teachers in schools where the basic conditions for innovation were not met (Table 2, Model 5). This effect remained significant when teacher-level control variables were added to the model (Table 2, Model 9).

The last research question considered the effect of the investment by the external school coach. This variable did not seem to impact the outcome variable (Table 2, Model 6). The investment by an external school coach did not seem to matter for teachers’ tolerance towards multilingualism.

As for teacher characteristics, we found no differences for gender, SES, and experience. We did find that kindergarten teachers and support teachers were more tolerant towards multilingualism than their mainstream class colleagues from primary school (Table 2, Model 8). We found a logical effect of teachers’ original tolerance towards multilingualism: Teachers that were more tolerant on T1 were more tolerant on T2 as well (Table 2, Model 9). Once we added the original tolerance towards multilingualism to the model after the control variables on the teacher level, those variables showed the differences in growth in tolerant practices for different teacher characteristics. Gender, experience, and SES did not show significant effects (Table 2, Model 9), so differences in these characteristics did not lead to a different intensity of tolerant practices. The grade a teacher taught did affect his/her growth in tolerant practices towards multilingualism (Table 2, Model 9): Kindergarten teachers and support teachers reported significantly more tolerant practices than primary school teachers, independent of the condition their schools participated in. We found no significant difference between the category of other teachers and primary school teachers.

**Discussion**

This study is unique in using large-scale quantitative data, including a pre- and posttest, and control schools (for an exception, see Ramaut et al., 2013). Using pre- and posttests enables us to state that differences in tolerant practices between schools in different conditions were not caused by pre-existing differences between schools prior to the innovative implementation. The participation of control schools is also important, because this shows that changes in tolerant practices were not due to contextual factors to which both the Validiv schools and the control schools were exposed. The large number of schools in this study allowed us to compare the effects of school
<table>
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<tr>
<th></th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
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<tbody>
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<td>2.420***</td>
<td>2.419***</td>
<td>2.424***</td>
<td>2.416***</td>
<td>2.416***</td>
<td>2.416***</td>
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<td>School level</td>
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<tr>
<td>Condition (ref. cat.: control)</td>
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<td>0.410*</td>
<td>0.402*</td>
<td>–0.263</td>
<td>–0.010</td>
<td>–0.416</td>
<td>–0.255</td>
<td>–0.113</td>
<td>0.271**</td>
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<tr>
<td>Linguistic diversity</td>
<td>–0.102</td>
<td>0.434</td>
<td>–0.066</td>
<td>–0.048</td>
<td>–0.043</td>
<td>0.019</td>
<td>–0.337</td>
<td>–0.355</td>
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<td>Meeting basic conditions for innovation</td>
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<td>Investment by external school coach</td>
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<td>Interaction Condition * Linguistic diversity</td>
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<td>Teacher level</td>
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<td>Original tolerance towards multilingualism (T1)</td>
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<tr>
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<td>0.027</td>
<td>0.020</td>
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<td>Grade (reference category = primary school)</td>
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<tr>
<td>Kindergarten</td>
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<tr>
<td>Support teacher</td>
<td>0.770***</td>
<td>0.496***</td>
<td>0.508***</td>
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<tr>
<td>Other teacher</td>
<td>0.497***</td>
<td>0.264**</td>
<td>0.283**</td>
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<tr>
<td>Experience</td>
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<td>0.020</td>
<td>0.025</td>
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<tr>
<td>SES</td>
<td>–0.001</td>
<td>0</td>
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**p < 0.001. **p < 0.01. *p < 0.05. *p < 0.1.
characteristics; other studies could only assume that certain school characteristics encouraged tolerance towards multilingualism.

Using this large-scale statistical technique, this article provides an answer to our research questions. The first research questions focused on the potential change in teachers’ tolerant practices towards multilingualism due to the Validiv project. The analyses show that the project has led to a higher rate of tolerance, even when controlling for teacher characteristics. We evaluated two aspects of the implementation process on top of the experimental condition of schools. As an answer to the third research question, we found that the fulfilment of the basic conditions for a successful change trajectory was very important. Apart from being an important stimulator for positive change in schools, this also suggests that the fulfilment of basic conditions for innovation is important for the long-term sustainability of school improvement (Muijs et al., 2004). The subject of the fourth research question was the investment by the external school coach. This investment did not seem to affect the tolerant practices towards multilingualism. On the one hand, this might be due to a lack of (wo)man power, since only four people (of which three were part-time) were available to coach 27 experimental schools. Since the implementation phase lasted for 2 school years only, the school coaches may have been understaffed and unable to bring about quantitatively measurable results. On the other hand, it might not be surprising that external school coaches have invested more time and energy in schools that have had more difficulties with changes. In that sense, most time and energy is invested in schools that evolve less naturally into new practices (Slavin, 2005).

In the second research question, we focused on the effects of the pupil populations in school. The analyses show that the linguistic diversity of schools does not stimulate teachers to experiment with tolerating multilingualism at school. We did not find a negative impact of the interaction term between linguistic diversity and condition on teachers’ tolerant practices, indicating that this study does not confirm Thrupp’s (1999) thesis that a challenging school population hinders the implementation of change because these schools have more difficulties in investing in change capacity (Muijs et al., 2004). At the same time, we did not find a positive impact, either. The linguistic diversity of a pupil population did not encourage a school to be more tolerant towards multilingualism in teaching. It might be that teachers in strongly diverse schools do not feel the need to pay attention to multilingualism, because in those schools the dominant language can be more convincingly imposed as a lingua franca (Pulinx, Agirdag, & Van Avermaet, 2014).

Kindergarten teachers have been found to be more tolerant towards multilingualism (Ramaut et al., 2013). This finding is also reflected in our study. This might be due to differences in focus between kindergarten teachers and teachers from primary school, which are also reflected in educational policies (Crevits, 2015). Kindergarten teachers might focus more on the child and its development; in primary school, teachers are more focused on the acquisition of the curriculum. Besides, our study also shows that independent of their original tolerance level and of the condition their school participated in, kindergarten teachers showed a stronger growth in tolerance towards multilingualism than primary school teachers. The same pattern was seen for support teachers. This is not a surprising result in terms of the schools participating in the Validiv project, since SIR found that innovations congruent with the teaching methods of a certain teacher are easier to adopt than innovations that do not fit his/her way of teaching (Ghaith & Yaghi, 1997; Guskey, 1988). For the teachers who were more tolerant towards multilingualism in the control schools, this study also shows that they had begun to employ more tolerant practices towards multilingualism between T1 and T2 than their less tolerant colleagues even though they did not receive any special coaching on the topic of multilingualism.

This study would have benefitted from more data, especially regarding the data gathered by the external school coaches. They completed the questionnaire about the trajectory of the schools in the Validiv project only when the implementation had ended. We realize retrospectively that it would have been better to follow up on the implementation more closely during the implementation phase. Unfortunately, we did not, and this left us with the option of asking the school coaches
about the implementation trajectory only afterwards. Nonetheless, having these retrospective data is better than having no data at all.

Another limitation of this study was the intensity of the coaching program by the external school coaches. Unfortunately, they had little time to provoke a change in teaching behaviour, and they did not have the staff to generate quantitatively measurable results. Implementing a more intense coaching program of longer duration might have enabled us to detect more precisely the effects of such a program.

This article was innovative in including school-level characteristics when researching teaching practices towards multilingualism. However, many more school-level characteristics, such as the teacher population or characteristics of the way schools are governed, could be investigated. Future research can surely gain by adding other school characteristics to its scope.

This article included some indicators of the implementation trajectory to the model. However, those measures are retrospective. Future research would profit by a systematic use of monitoring the process of innovation in schools. This can be done through ethnographically describing what happens or by providing a tool for external school coaches that they can fill out during the implementation. Another possibility for future research on this topic could be the qualitative study of the interaction between individual teachers’ monolingual beliefs and their teaching practices, and how school policies or innovative implementation programs influence these. Or, when considering a more bottom-up approach, how those monolingual beliefs influence the way a school develops its policy towards multilingualism.

The most important insight for policy in this paper is that schools that are ready for innovation gain more from it. Policymakers as well as school principals can reinforce a school’s capacity for change by supporting the school as an open and trusting environment for teachers to develop professionally. This means that policymakers should continue supporting collaboration between colleagues (Harris, 2002) and initiatives that promote professional development in the classroom (Harris, 2002; Hopkins, 2001). However, it is the task of school principals to ensure this safe environment at school. For instance, this could mean that teachers get involved in each other’s professionalization trajectories. By observing each other, they not only provide feedback to each other but also gain inspiration for their own teaching practices. It might also help if the teachers’ schedules were rearranged in order for them to have some time during the school day to share ideas about preparation and experiences with their colleagues. Principals need to actively coach and not merely evaluate school team members. Teachers need to feel they are allowed to make mistakes in order to grow in their teaching practices (Harris, 2002).

**Conclusion**

In this study, we provided a bridge between school improvement (SIR) and sociolinguistic research. Monolingual ideology impacts teachers’ practices and beliefs towards multilingual pupils (e.g., Gogolin, 2002). Many teachers believe that banning the home languages of multilingual pupils from being used at school is in the students’ best interest (Gogolin, 2002; McLaughlin, 1992). Sociolinguistic research, however, shows that multilingual pupils use their linguistic repertoires in an integrated, natural way (Jørgensen, 2005). Therefore, it might help these pupils to be allowed to use their home languages for learning (Cummins, 2001; García, 2013). SIR has suggested several important aspects for the innovation process in schools (e.g., Harris, 2002; Hopkins, 2001; Stoll et al., 2003). These were applied in the Validiv project, a project aimed at promoting pupils’ learning processes by offering room for using pupils’ home languages in primary education.

The main focus of this study was to look at teachers’ tolerance towards multilingualism in schools. Several projects have aimed at enhancing teachers’ tolerance towards multilingualism (e.g., Bourne, 2001). Various qualitative studies have evaluated implementations in schools and indicated possibilities for improving teachers’ attitudes towards multilingualism. This study made
use of large-scale quantitative data including a pre- and posttest, and control schools (for an exception, see Ramaut et al., 2013).

From the research data, we concluded that the Validiv project leads to a higher rate of tolerance, even when controlling for teacher characteristics (Research question 1). However, kindergarten teachers have been found to be more tolerant towards multilingualism (Ramaut et al., 2013), and this finding is also reflected in our study. Additionally, our study shows that, independent of their original tolerance level and of the condition their school participated in, kindergarten teachers showed a stronger growth in tolerance towards multilingualism than primary school teachers. This study also shows that they had begun to employ more tolerant practices towards multilingualism between T1 and T2 than their less tolerant colleagues even though they did not receive any special coaching on the topic of multilingualism.

The analyses also show that the linguistic diversity of schools does not stimulate teachers to experiment with tolerating multilingualism at school (Research question 2). With regard to the third research question, we found that the fulfilment of basic conditions for a successful change trajectory was very important. In schools that were more prepared for an experimental implementation, we saw a stronger development towards tolerating multilingualism in teachers. It is very important that schools that are prepared to innovate continue doing so (Stoll et al., 2003). Other schools, however, struggle with innovative practices; often, this does not have to do with the content of a certain innovation but rather with the school’s preparedness to be reflective and self-evaluative (Slavin, 2005; Stoll, 2009).

Although the limited time invested by the external school coach did not seem to affect the tolerant practices towards multilingualism (Research question 4), our findings, overall, point to the recommendation to invest more intensively in the coaching of schools and teachers in order to prepare them for changing their practices. A change in process is always connected with anxiety and doubts regarding the benefits of a specific project. Therefore, schools need to invest in their capacity for change (Harris, 2002; Schein, 1992; Van den Berg & Ros, 1999). Teachers need to be convinced that change is necessary, need to be informed on the topic, need to be motivated to take action, and should be provided with directions on how to accomplish the change in an environment in which it is safe to make mistakes and to experiment (Fullan, 2001; Schein, 1992).

What this study shows is that it is possible to influence teachers’ classroom behaviour. However, before we can expect a change to happen, it is very important to fulfil certain basic prerequisites for the successful implementation of innovations. Schools need to be “ready” for change.

Disclosure statement

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References


