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Can Schools Engage Students? Multiple Perspectives, Multidimensional School Climate Research in England and Ireland

- The school climate is a multidimensional concept.
- On average, students intent to go voting in the future will be higher if students experience a positive school climate.
- Teachers play a major role in the school climate.
- Researchers, practitioners, and policymakers should be aware of the importance of all aspects of the school climate

Purpose: This article assesses how different aspects of the school climate relate to students' intended future electoral engagement. Until now, political socialization researchers found evidence for a relation between formal citizenship education in school and students' participation levels. There is less consensus, however, in how multiple aspects of informal political socialization can contribute to individuals' participatory acts.

Method: To learn more about several aspects of informal political socialization and their relevance for student intended electoral participation this work draws on educational sciences and political socialization literature and focuses on multiple dimensions of school climate (cf. Konold, 2014; Lenzi, 2014) and their relationship to future electoral engagement. We rely on the English and Irish International Civic and Citizenship Survey (ICCS) 2009 data to operationalize multiple dimensions of the school climate. We estimate a structural equation model in which school climate is measured by indicators based on student and teacher questionnaire data aggregated at the school level. The relationship between multiple dimensions of school climate and student future electoral participation is tested.

Findings: We find that in order to engage students in voting; schools should focus not only on the formal curriculum but also on more informal aspects (the school climate). Implications for research, policy, and practice are discussed.

Keywords:

School climate, citizenship education, political socialization, participation, ICCS 2009

1 Introduction

From the 1960s onward research on political socialization has discussed the importance of different agents of socialization in influencing young peoples' civic competences. Studies in the sixties and seventies often conclude that formal civic education, in the sense of civic courses, in school does not influence young peoples' attitudes nor their political participation (Jennings & Niemi, 1968; Langton & Jennings, 1968; Niemi & Sobieszek, 1977). These studies assign more importance to the influence of families, peers and religious organizations within the socialization process. Yet, later studies on the role of schools in the political socialization process provide evidence of school influences on students' engagement and attribute these findings to better measurements and more sophisticated analysis techniques that can take into account the embeddedness of young people in the same/different schools (Niemi & Hepburn, 1995; Niemi & Junn, 1998; Torney-Purta, Lehmann, Oswald, & Schulz, 2000). Thanks to this

increased attention to schools and their role within the political socialization process new questions are raised.

Recent review studies show that evidence of a political socialization effect through schooling needs to be scrutinized because evidence remains small and debatable (Geboers, Geijsel, Admiraal, & Dam, 2013; Manning & Edwards, 2014; Persson, 2015). Scholars respond to this concern in different ways. On the one hand, scholars describe the need for a new methodological change and the inclusion of more randomized experiments or panel data to better measure the school influence on students' civic engagement (Amnå, 2012; Campbell & Niemi, 2016). On the other hand, scholars want to reevaluate the political socialization theory by paying more attention to informal school influences next to the formal curriculum influences when considering the impact schools can have on civic outcomes (Campbell, 2006; Glover & Coleman, 2005; Himmelman, 2013).

In this article, we will focus on these informal school experiences. Where the formal school context is directly linked to the hierarchically structured, chronologically graded 'education system' (Scheerens, 2011, p. 203), the informal school context is broader, experience-oriented and observes the school as a social actor providing students a social experience. The informal school context can then be defined as the 'experiences schools provide of being part of a community' (Campbell, 2006, p. 153). In this article, we want to learn more about the importance of these informal school experiences. We will observe these school experiences to gain a better understanding of schools' role in the socialization process. In

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democratic countries, we expect schools to socialize students in a democratic environment and give them democratic experiences (Biesta, 2006; Campbell, 2006). Students can, for example, be involved in decision-making at school or help organize activities to improve the school environment. In this context researchers define the school experiences as the *democratic school climate* (Biesta, 2006; Campbell, 2006) or the *school citizenship climate* (Homana, Barber, & Torney-Purta, 2006).

In this article, we discuss different kinds of social school experiences and their role in shaping the *democratic school climate* where young people are socialized into citizenship. Informed by definitions formulated in the educational sciences literature (Glover & Coleman, 2005; Thapa, Cohen, Guffey, & Higgins-D'Alessandro, 2013; Voight & Nation, 2016; Wang & Degol, 2016), we observe three types of experiences: a) related to the school's order, norms and values, b) related to teaching and learning practices in school and c) relational experiences.

As the *school climate* concept in the political socialization literature is less commonly used (Campbell, Levinson, & Hess, 2012; Hoskins, 2013), this work builds upon definitions of school climate used in educational sciences literature. In the field of educational sciences, school climate was found to provide 'optimal foundation for social, emotional and academic learning' (Thapa et al., 2013, p. 7). Empirical studies offer extensive support for the links between school climate and students' achievement in different domains of learning. Nevertheless, evidence regarding its impact on civic learning outcomes remains limited.

The current work intends to address this gap. We first review definitions of the school climate informed by the educational literature and operationalize it in the context of civic education. Next, we examine theoretically and empirically its links to electoral participation as this is a fundamental civic competence in democratic societies.

2 Democracy's need for active citizens

Civic education aims to stimulate multiple civic outcomes such as civic knowledge (Campbell & Niemi, 2016), political trust (Flanagan & Stout, 2010) or political tolerance (Diazgranados & Sandoval-Hernandez, 2015). This article is interested in how schools can engage students and more specific, how democratic experiences in school relate to civic behavior such as electoral participation (e.g., voting). Voting is one of the most important civic behaviors for democracies. Consequently, the decline in electoral participation (Dalton, 2008; Dalton & Welzel, 2014) is a threat to democracy (Almond & Verba, 1989; Campbell et al., 2012; Crick, 2008). A first way this decline threatens democracy is the erosion of the political legitimacy. If many people cast their vote, decisions are supported by many and trust levels are high (Hooghe & Stiers, 2016). Without the participation of a major amount of the population, the legitimacy of governmental decisions disappears. A second threat is the disappearance of shared values. If citizens no longer participate in a common cause, the community becomes

more individualized (Dalton & Welzel, 2014; Inglehart, 1997). Although the existence of different voices and diversity can be positive for the community, it entails a third threat. If individuals participate only in informal ways (e.g., boycotting, signing petitions, legal protest), some voices will sound louder while other voices disappear into the crowd. Socio-economic differences or gender differences are bigger when it comes to informal participation compared to electoral participation (Ballard, 2014; Marien, Hooghe, & Quintelier, 2010; Sloam, 2014). These threats provide evidence of the need for more electoral participation.

Citizenship education can be seen as one of the most valuable tools to engage people. Through education, students can gain civic knowledge and become more involved (Schulz, Ainley, Fraillon, Losito, & Agrusti, 2016). To unravel the influence of civic knowledge (Galston, 2001) early studies focused mainly on formal education and measured how students learn about politics (Niemi & Junn, 1998; Torney-Purta, Schwiller, & Amadeo, 1999). Nevertheless, the idea of civic knowledge as causal mechanism triggering participation is today subject to discussion (Manganelli, Lucidi, & Alivernini, 2014; Manning & Edwards, 2014; Niemi & Klingler, 2012). Because aspects of the school climate may uniquely affect civic outcomes as well, recent authors perceive civic knowledge no longer as sufficient to create active, participating citizens and suggest that citizenship education should also pay attention to the influence of democratic experiences in school (Bischoff, 2016; Campbell et al., 2012). Therefore it is essential to take into account both the role of civic knowledge education and democratic school climate experiences in future research on the topic of youths' political participation (Campbell et al., 2012; Hoskins, 2013). This research will help understand how school experiences are related to students' future electoral participation and will stimulate future research to consider the importance of multiple school experiences when studying the process of political socialization in youth.

3 Democratic school climate experiences and future intended participation

In contrast to the limited attention toward a general school climate citizenship research, multiple studies in this field observe the influence of specific teaching and learning practices on students' future participation or engagement. Particular attention goes toward the influence of active teaching and learning styles (which can be seen as one kind of democratic experience in school). Researchers discuss the positive influence of civic classroom discussions on civic outcomes (Alivernini & Manganelli, 2011; Barber, Sweetwood, & King, 2015; Campbell, 2008; Ekman, 2013; Hooghe & Dassonneville, 2013; Manganelli, Lucidi, & Alivernini, 2015; Maurissen, 2017; Torney-Purta, Barber, & Wilkenfeld, 2007; Wilkenfeld & Torney-Purta, 2012) or observe the influence of students' active participatory experiences in school (Gilleece & Cosgrove, 2012; Keating & Janmaat, 2015). These studies often refer to the theory of

experience-based learning as described by Dewey (1938) or Shernoff (2013). However, the results of these separately observed experiences are mixed. Even when political socialization studies combine the observation of multiple democratic experiences in school, the results are not clear-cut and easy interpretable (Quintelier & Hooghe, 2013; Torney-Purta, 2002). In the educational research field, research would remark that these observations are restrained to the measurement of one single dimension instead of multiple dimensions which are important while observing school climate experiences.

Some political socialization studies are closer related to this multidimensional school climate concept. Dijkstra and his colleagues (2015) for example include both relational experiences (e.g., teachers ensure that students treat each other with respect) and content related aspects (e.g., language and numeracy tailored to students' educational needs) to observe school climate influences. Lenzi and her colleagues (2014) also emphasize the importance of participatory experiences. Two studies including a stronger and multidimensional concept of school climate are the study from Flanagan and Stout (2010) and the study from Keating and Benton (2013). They each measure participatory experiences, relational experiences and values of solidarity in school. Both studies obtain different results. Flanagan and Stout (2010) provide evidence of a relationship between the democratic school climate and students' engagement in the American context, whereas Keating and Benton (2013) only find mixed results in England. In their discussion Keating and Benton (2013) attribute these different findings to contextual differences or measurement invariance. Another reason can be that a more comprehensive understanding of the school climate is needed within the political socialization literature.

4 The school climate and educational effectiveness

The mixed results in the political socialization research stand in contrast with the outcomes described by educational studies. In this field, multiple studies describe how schools and teachers can enhance students' well-being (Jennings & Greenberg 2009; Lester & Cross 2015) or raise students' achievement levels (Wang & Degol, 2016; Wentzel, 1997). All these studies describe that the school climate has a clear and positive influence. Although the concept is not always defined and measured exactly in the same way (Berkowitz, Moore, Astor, & Benbenishty, 2016), educational studies tend to use a more comprehensive and comparable approach to the study of school climate. In the following paragraphs, this article provides an accepted definition of the school climate and points out the most important strengths of this definition (Thapa et al., 2013; Voight & Nation, 2016; Wang & Degol, 2016).

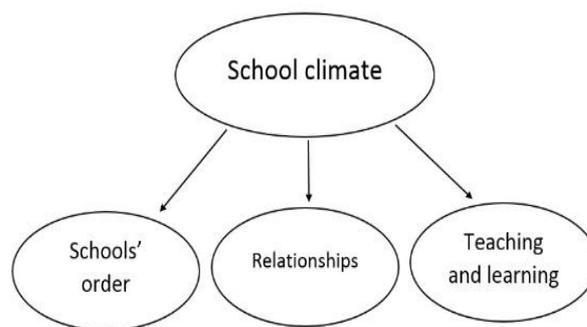
Sometimes defined as the *school culture* (Wren, 1999), *the hidden curriculum* (Jackson, 1968) or the *school ethos* (McLaughlin, 2005), it is the term *school climate* which is more commonly used (Wang & Degol, 2016). It is 'based on patterns of students', parents' and schools' personnel's experience of school life and reflects norms,

goals, values, interpersonal relationships, teaching and learning practices, and organizational structures' (Cohen, McCabe, Michelli, & Pickeral, 2009, p. 182). Notwithstanding various versions of this definition, the common strength in school climate definitions is always the focus on multiple dimensions (Cohen et al., 2009, p. 182; Voight & Nation, 2016; Wang & Degol, 2016) and multiple perspectives (Kohl, Recchia, & Steffgen, 2013; Thapa et al., 2013). In the next paragraphs, this article explains how these dimensions and perspectives are being perceived and how we can translate this school climate concept to the civic learning context.

4.1 Multidimensionality of the school climate

Thapa (2013) and his colleagues argue that especially efforts grounded in the whole school can provide a powerful influence. They rely on the ecological systems theory advanced by Bronfenbrenner (1979) to explain why multiple dimension need to be included to assess school influences. In line with this idea both the extensive overview studies of Voight and Nation (2016) and Wang and Degol (2016) point out multiple dimensions: (1) safety, (2) community, (3) academic and (4) institutional environment. These dimensions match the ones mentioned in the National School Climate Council's definition: (1) the *schools' order* (Cohen et al., 2009; Thapa et al., 2013), (2) the *relationships at school*, (3) the *teaching and learning practices* at school and the (4) *organizational structures*. The first three dimensions are socially substantiated dimensions whereas the fourth is a practical context oriented dimension. In this study, we will focus on the first three dimensions, while the institutional can be considered as fixed.

Figure 1: School climate dimensions



The first dimension described as the *schools' order* relates to schools' need to express their norms and values to their students and to create a safe and orderly environment. Ferrás and Selman (2014) observe this order in school by measuring students' reactions against bullying. Other studies measure the *safety* in school by observing problems and students' social behavior (Cohen et al., 2009; Thapa et al., 2013) and describe how this safety and order measure can influence each kind of school outcome.

A second dimension is built on the prominent position of relationships at schools. Comparable to Bandura's social learning theory (Bandura, 1986), this dimension

highlights how teachers, peers, and everyone in the school can learn through interactions with each other. The better the relationships, the easier social learning will happen and the better the schools' social climate. A positive relationship between all actors in a school is characterized by caring and supportive ties (Hamre & Pianta, 2006). Through positive relationships, teachers can also be considered as democratic role models and influence civic learning (Jennings & Greenberg, 2009; Sampermans & Claes, 2018)

The third dimension consists of teaching and learning practices. Dewey was the first to describe the experience-based learning theory that contributes to making young people more democratic (Dewey, 1913, 1938). His theory claims that students can learn from experiences in school. Kolb (1984) describes this experience process in his experiential learning theory and Dürr (2005, p. 13) explains this theory by the statement that 'teaching and learning about democracy will fail unless it takes place within a democratic educational framework.' Experience-based teaching and learning styles can then be: service learning at school (Birdwell, Scott, & Horley, 2013; Naval & Ugarte, 2012), school councils and school visits to a parliament (Hoskins, Janmaat, & Villalba, 2012; Quintelier, 2010), classroom discussion (Campbell, 2008) or remembrance education (Maitles, 2010; Maitles & Cowan, 2012). The more democratic experiences students have at school, the more effective the democratic school climate.

These three dimensions not only influence the general school climate. They can also relate to each other. A relationship often pointed out is the link between student-teacher relationships and classroom discussions at school. The better the student-teacher relationship, the easier teachers, can implement classroom discussions. (Clas, Maurissen, & Havermans, 2016) for example emphasizes that good student-teacher relationships are necessary to obtain effective classroom discussions. Another important linkage can be found on the level of bullying. Bullying affects both the relationships between students at school and the social behavior at schools (Ferrás & Selman, 2014; Klein, Cornell, & Konold, 2012). These strong ties between the dimensions indicate the importance not to neglect the interrelatedness while assessing the school climate.

4.2 Multiple perspectives of the school climate

As the school climate dimensions are built on social interactions between students and teachers within the school, different actors can be responsible for its establishment. Both students and teachers can influence how the school climate develops. Therefore it is important to include both student and teacher perspectives while observing the school climate (Kohl et al., 2013; Wang & Degol, 2016). Studies including only students' or teachers' perspectives (Keating & Benton, 2013) agree they would benefit from the inclusion of both perspectives in one study.

5 Research questions and hypothesis

The literature above provides an overview of citizenship education research and its quest to provide evidence of activating practices at school and of ways in which schools can create active and informed citizens. As the influence of an official social science curriculum or civic courses is strongly under discussion, more reflection and research is needed about the role of potentially valuable informal civic learning in formal school settings. Therefore, this article aims to reflect and test empirically broader multidimensional conceptualizations of school climate and their potential link with attitudes towards future electoral participation in youth. To do this, this article brings forward two research questions (RQ):

RQ1 Are broader, multidimensional, conceptualizations of school climate supported empirically by the ICCS data?

RQ2 Are these dimensions linked to intentions for future electoral participation in youth?

By the conceptualization of school climate in the context of civic learning we bring forward two hypotheses:

H1 The school climate is multidimensional in structure and it is composed by the following three strongly interrelated dimensions: schools' order, relationships in school and the teaching and learning practices in school.

H2 On average, these dimensions relate positively to overall intentions for future electoral participation.

6 Data

England and Ireland are both Western, democratic countries which attach great importance to citizenship education. Both these countries followed the advice of the Eurydice network (an information network of the European Commission on education in Europe) to pay attention to the informal democratic school climate (Eurydice, 2005). As confirmed by more recent Eurydice overviews, only one-third of the European countries refers to the informal school climate in its national regulations (Eurydice, 2017, p. 124; Eurydice, 2012, p. 59). As a result of this, we believe that England and Ireland are suitable to be observed to learn more about the democratic school climate. Earlier research also pointed out that the school climate can comparably be measured in these two countries (Sampermans, 2017).

This article uses the pooled ICCS 2009 data of England and Ireland to observe the school climate. ICCS 2009 is an international survey measuring the civic knowledge, attitudes, and engagement of 14-year-old students in 38 countries. The samples in each country were designed in a two-stage way. In the first stage Probability Proportional to Size (PPS) procedures were used to select schools within each country. In the second stage, within each sampled school, an entire class from the target grade was chosen at random, with all the students in this class participating in the study. These student-classroom level results (civic knowledge test, background questionnaire, and regional questionnaire) can be linked to school level because, if possible, this randomly selected classroom was the only observation level in each school. Next to students also fifteen teachers were selected at



random to gain more school context information. The information from students and teachers can only be linked on the school level because the teacher sample requirements were only that teachers would teach in the observed grade.

The English and Irish dataset used for analysis in this article include 6271 observations at the student level. The English dataset includes 2916 students from 126 schools; the Irish dataset includes 3355 students from 145 schools. Aggregated to the school level we have 271 observations in the pooled dataset. For the analyses, we will include weights as advised by Zuehlke and Vandenplas (2009).

7 Variable operationalization

One goal of this article is to observe how the school climate can be linked to political participation. Hence, we are interested in students' future electoral participation. Electoral participation is measured by three questions asking whether students would vote when they reach adulthood: in local elections, in national elections; and whether they would get information about candidates before they cast their vote. Answers were measured while using a four-item Likert scale: ("I would certainly do this", "I would probably do this", "I would probably not do this" and "I would certainly not do this") (Schulz, Ainley, Fraillon, & Friedman, 2011, p. 189). The reliability of this scale in England (Cronbach alpha= 0.87) and Ireland (Cronbach alpha= 0.84) is good.

The observed independent variables in the school climate model are derived from both student and teacher questionnaires. The schools' order is measured by the teachers' perceptions of social problems in school and the teachers' perceptions of the students' social behavior at school. These concepts are measured by respectively nine and six questions. A scale is constructed out of each of these clustered questions (Schulz et al., 2009, p. 206). Appendix 3 and 4 both give an overview of the items used to construct the scales. Both these scales are reliable in England (Cronbach alpha= 0.81 and 0.89) and Ireland (Cronbach alpha= 0.86 and 0.90). The scores on these scales are aggregated to the school level to represent the schools' order dimension.

The quality, of the relations at the school is measured by questions from both the student and the teacher questionnaire. On the one hand, we measure student-teacher relationships as perceived by the students. This scale is derived from seven questions measuring how students perceive their relationship with the teachers at school including an item measuring whether students can discuss current, political topics with their teachers (Schulz et al. 2011, p. 171). An overview is given in Appendix 5. On the other hand, teachers were asked how they perceived the relationships between students. Three items measure this topic and are combined to create one scale. An overview is given in Appendix 6 (Schulz et al., 2011, p. 206). The scores on both scales are aggregated to the school level to represent the school level relationships between students and also between students and teachers. Both relational scales are

sufficiently reliable in England (Cronbach alpha= 0.59 and 0.88) and Ireland (Cronbach alpha= 0.58 and 0.87)¹.

Finally, the analyses in this article measure two teaching and learning practices in the school climate model. Both measurements are situated on the students' level. On the one hand, the article measures openness in classroom discussions. Six items measure how students perceive the classroom climate. One of the items measures for example whether students can bring up current political events for discussion in the class. The items are listed in Appendix 7, and together they can be seen as a reliable scale (Cronbach alpha= 0.81 in England and 0.78 in Ireland) (Schulz et al., 2011, p. 168). On the other hand, the article measures how often the students indicate to participate in their school. This is measured by six items listed in Appendix 8 (Schulz et al., 2011, p. 167). The items do not measure general engagement but a specific type of engagement captured by items tapping into activities such as voting, taking part in decision making, becoming candidate for class representative or the school parliament. These activities can be seen as civic experiences in school. Together, these items represent a reliable scale (Cronbach alpha= 0.70 in England and 0.61 in Ireland). The values of these scales are aggregated (mean per school) to the school level before implementing them into the predicted model.

8 Methods

We use structural equation modeling (SEM) techniques to observe theoretically expected relations between the scales. This type of analysis was also used by ICCS study analysts to validate scales, including the ones used for this current analysis (e.g., perceived student-teacher relationships). Next, the ICCS scales are estimated based on item response theory (IRT) models (Schulz et al., 2011, pp. 160–161). Further elaborations (e.g., a combination of these scales to construct multi-dimensional concepts such as the school climate) were not carried out. In this study, we go beyond most current operationalizations of school climate and attest a multidimensional latent construct of the school climate based on the IRT-scales build in the context of the ICCS 2009 survey.

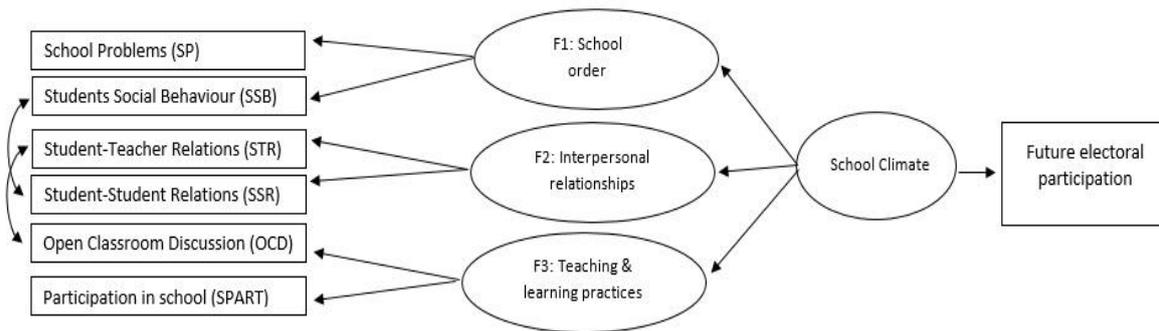
In line with the educational theory, the operationalization of the school climate model includes three dimensions (Kohl et al., 2013; Thapa et al., 2013; Wang & Degol, 2016). On top of these dimensions, we will include two complementary relationships between dimensions, one between the student-teacher relationships and open classroom discussions (Claes, Maurissen, & Havermans, 2017) and the other between behavior in school and the relationships among students (Ferrás & Selman, 2014; Klein et al., 2012). The school climate can then be perceived as a second order latent construct. In the first step, dimensions are measured by observable indicators. In a second step, the school climate is constructed by the latent dimensions. In Figure 2, the rectangles are the observed indicators and the ovals the latent concepts. The three dimensions are mentioned in the ovals in the middle of the figure. On the right side, the school climate concept is included. In a final step, the model regresses



the latent school climate concept onto the school average of students' future electoral engagement, to

observe whether the school climate can be linked to students' intention to vote in the future.

Figure 2: The school climate model



To analyze this school climate model, we use SEM-techniques applied to data capturing all three dimensions. The corresponding information, based primarily on the student and teacher questionnaires is aggregated at the school level (mean per school). As an ideal SEM-analysis needs minimum 250 observations (Hu & Bentler, 1999), we combine the English and Irish dataset. We can do this because we know from previous research that the school climate in these regions is fully comparable or measurement invariant at the scalar level (Sampermans, 2017). In Appendix 1, we include an analysis confirming measurement invariance of the school climate in these two datasets.

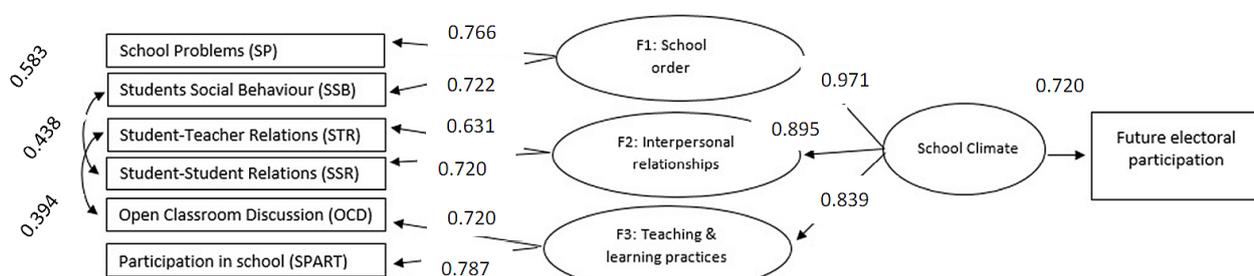
Using Mplus software version 7.4 (Muthén & Muthén, 2015), we construct the measurement model and regress this latent model on the dependent variable: electoral participation. The partitioning of the variance for this dependent variable in an unconditional two-level model points out that the school level variance is 14.5 percent. This is important to keep in mind while we describe the results. In this article, we will not discuss individual perceptions of the school climate and individual outcomes of this school climate².

9 Results

To assess the model fit of the estimated model, we check a combination of fit indices (Byrne, 2010; Kline, 2011). The results show a good model fit of the predicted model. The chi-square, 38,253, is significant at 0.001³. The model has eleven degrees of freedom. CFI=0.95, TLI=0.91, SRMR= 0.05, RMSEA= 0.09. As a result of this, it is possible to interpret the relations represented in the model.

The factor loadings of the indicators on the dimensions vary between 0.63 and 0.79. Also, the factor loadings of the dimensions of the school climate vary between 0.90 and 0.97. On the one hand the lowest factor loadings are high enough (higher than 0.60) to keep them included in the estimated model (Muthén & Muthén, 2015) on the other hand the highest factor loadings point out that the indicators fit well into the model (Jöreskog, 1999)⁴. Next, to the factor loading in the measurement part, the model also includes a regression part: the relation between the latent school climate concept and the dependent school mean of students' future electoral participation. This part shows a strong regression factor of 0.72 explaining 51.8 percent of the variation of the dependent variable⁵.

Figure 3: Estimated school climate model (including dimensions)



Source: ICCS 2009. Results from a Mplus analysis: n=271, $\chi^2=38,253$ CFI=0.952, SRMR=0.051 All relationships indicated in the model are significant and standardized.

Teachers' perceptions of problems and teachers' perceptions of the students' social behavior in school have strong loadings in the schools' order dimension. These loadings are 0.77 and 0.72 respectively. These indicators can, therefore, be perceived as good predictors of the

schools' order. Both these measurements seem to be related to each other in the analysis. The results show a correlation of 0.58. Also, the theoretically expected correlation between students' social behavior and students' relationships can be confirmed in this analysis.

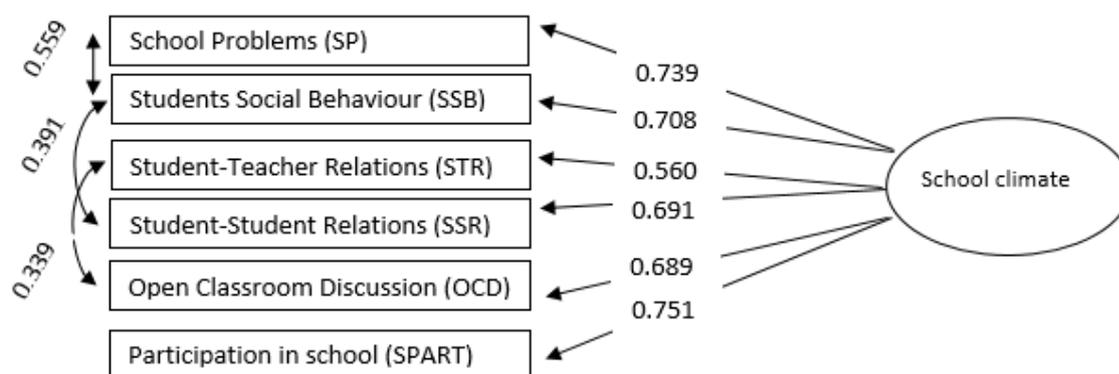


Here we find a correlation of 0.44. The relational indicators student-teacher relationships (0.63) and relationships among students (0.72) load clearly on their underlying dimension. Student-teacher relationships correlate with the classroom discussions (0.39). The practices in school measured by open classroom discussions and participation at school are good indicators of the teaching and learning practices. They load properly on the teaching and learning dimension (0.72 and 0.79 respectively).

Each of the three dimensions formed by the indicators shows a strong factor loading on the school climate. The

strongest loading is 0.97 and comes from the schools' order dimension. Next, the teaching and learning practices dimension shows a strong loading of 0.895. Finally, the relational dimension has a loading of 0.84. By interpreting these results and observing the school climate dimensions, we stay close to the school climate theory. This observation shows us that each of these dimensions is equally important and that they are each strongly related to the school climate concept. Next, we can also expect that the indicators of the school climate model are related directly to the school climate concept. We test this idea in a new model: Figure 4.

Figure 4: Estimated school climate model (Without theoretically described dimensions)



Source: ICCS 2009. Results from a Mplus analysis: $n=271$, $\chi^2=32.289$, $CFI=0.962$, $SRMR=0.043$. All relationships indicated in the model are significant and standardized.

Figure 4 confirms that a model including observations on each dimension is a sufficient way to observe the school climate. This model can comparably measure the school climate as Figure 3 including an empirical observation of the dimensions of the school climate.

Both constructions of the school climate regress significantly on the students' average expected future electoral participation. It indicates that the school climate as perceived by the students and teachers in a specific school is related to how students in that school on average expect to participate in the future. If the school climate is better, students in this school will be more inclined to state their intentions to vote in the future.

These models (Figure 3 and Figure 4) indicate that the school climate is not negligible. We want to stress that these findings are only a partial indication of the possible influence school can have on students' future engagement. The school climate can be perceived as a secondary curriculum next to the formal curriculum. To take this formal curriculum and other context influences into account, we perform additional analyses. We include students' (school) average scores on the ICCS 2009 civic knowledge test. For each student five plausible test scores were calculated based on a cognitive test including 79 test items⁶. We also include two control variables that can be used to take school environment characteristics into account: the school averages of the number of books students have at home and students' gender. Next, we perform a regression analysis including the aggregated results. We control for the mean results

on a civic knowledge test, the number of boys and girls in a school and books at home as one background measurement closely related to the socio-economic background. The results are shown in Appendix 9. By comparing the R^2 of the model including control variables (Model I) and the R^2 of the model including both the control variables and the school climate model (Model II), it is clear that the school climate still has a ten percent additional explanatory power to the basic model. This confirms again that the influence of the school climate is not negligible.

Although the regression model (shown in Appendix 9) is a simplification of our expectations and does not observe covariance between the indicators, the relationships in the simplified regression mainly correspond to the estimated school climate model. The only differences are the negative relationships between both open classroom discussions and students' social behavior at school and the dependent variable. This can be caused by covariation with the control variables or the fact that the linear regression does not take covariance between indicators into account. This indicates that the school climate model gives us a good grasp of what is going on within the school climate. Future school climate research should benefit the inclusion of control variables in the model.

10 Conclusion and discussion

First of all, this article shows that it is possible to perceive the school climate as a multidimensional concept. The

three dimensions observed in this article, the schools' order, relationships in school and teaching and learning practices, are each important within the school climate model. Each of these dimensions shows high factor loadings. And comparable to our predictions, we can find correlations between the dimensions. Next, this article provides evidence of an association between the democratic school climate and students intended future electoral participation. In schools where the school climate is better students are on average more engaged.

Each of the measured dimensions based on aggregated averages of student- and teacher perceptions contribute equal to the school climate and can in a second step be linked to the students' average of intended future participation. Results indicate that this model explains a significant part of the variance in students' future electoral participation at the school level.

Describing these results, this article contributes to the discussion held on the school influences in the political socialization process. In earlier political socialization literature, lots of mixed results are discussed. This research applied a broader school climate definition aiming for a better grasp of the relationship between school experiences and civic outcomes. We argue that future citizenship education research should also pay more attention to the operationalization of school climate. More specifically, the findings reported here indicate that it is reasonable to perceive the school climate as a multidimensional and multi-perspectives concept. The results also show that these aspects are interrelated. In contrast to the political socialization research discussed earlier in this article, which only includes one or a limited amount of social school experiences, future research should pay more attention to each of the specific school climate dimensions and the interplay among them.

Related to the importance of school experiences teacher education programs should, therefore, pay more attention to political socialization and school policies should give teachers the opportunity to reflect on the school climate including experiences related to each of the dimensions.

This study also acknowledges some limitations. Future studies should further reflect on how to measure the democratic school climate. This study is based on the ICCS 2009 results and was able to observe civic experiences in the classroom; students' participation in school elections and students' possibility to discuss political topics in the classroom. The data also includes student-teacher relationships and a reflection on the possibility to openly discuss current, political topics. The schools' order was measured by more general scales including teacher perceptions of student behavior and problems in school. Although most of the scales are closely related to the educational literature and apply the scales to a political socialization context, socialization literature should further try to improve the measurement on each of these dimensions and further reflect on how they are related.

A second measurement reflection that needs to be made and especially related to the use of teacher

questionnaires is social desirability. (Debnam, Pas, Bottiani, Cash, & Bradshaw, 2015; Krumpal, 2013). Since an optimal school climate measurement includes multiple perspectives, it is important to further reflect on a possible desirability bias.

Related to multiple perspectives in this type of measurement, the validity can also improve if multilevel structure can be taken into account. Using a multilevel approach, teachers can be observed at the school level while students' characteristics and more background characteristics can be observed at the individual level.

This article also points out multiple opportunities for further research. It is clear that teachers play a central role in the school climate. On the one hand, teachers can be a role model for students at the relational dimension. On the other hand, they can provide their students with democratic experience. They can lead class discussions and give students the opportunity to participate at school. But, we do not know how teachers themselves perceive this important role. Therefore, it would be interesting to focus more on how the teachers perceive the school climate and how they perceive citizenship education efforts.

Another opportunity for this kind of citizenship research is the school climate's potential ability to close a participation gap. Educational research already provided evidence of school climates' ability to close an achievement gap (Castillo, Miranda, Bonhomme, Cox, & Bascopé, 2014). Comparable to this study, civic school climate research should pay attention to the ability of informal school characteristics to engage disadvantaged groups. If different groups perceive the school climate, they can also be influenced differently. It is, for example, possible that students with a different socio-economic background or with another migration background perceive the school climate differently. This different perception can then lead to a different intention to participate in future elections. More research is needed to understand how the school climate relates to different groups and how it can be actively used to reduce group related electoral participation gaps.

References

- Alivernini, F., & Manganelli, S. (2011). Is there a relationship between openness in classroom discussion and students' knowledge in civic and citizenship education? *Procedia - Social and Behavioral Sciences*, 15, 3441-3445. doi.org/10.1016/j.sbspro.2011.04.315
- Almond, G. A., & Verba, S. (1989). *The civic culture: Political attitudes and democracy in five nations*. SAGE Publications.
- Amnå, E. (2012). How is civic engagement developed over time? Emerging answers from a multidisciplinary field. *Journal of Adolescence*, 35(3), 611-27. doi.org/10.1016/j.adolescence.2012.04.01

- Ballard, P. J. (2014). What motivates youth civic involvement? *Journal of Adolescent Research, 29*(4), 439–463. doi.org/10.1177/0743558413520224
- Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. New York, US: Prentice-Hall, Inc.
- Barber, C., Sweetwood, S. O., & King, M. (2015). Creating classroom-level measures of citizenship education climate. *Learning Environments Research, 18*(2), 197–216. doi.org/10.1007/s10984-015-9180-7
- Berkowitz, R., Moore, H., Astor, R. A., & Benbenishty, R. (2016). A research synthesis of the associations between socioeconomic background, inequality, school climate, and academic achievement. *Review of Educational Research, 87*(2). doi.org/10.3102/0034654316669821
- Biesta, G. (2006). *Beyond learning: Democratic education for a human future*. Boulder: Paradigm.
- Birdwell, J., Scott, R., & Horley, E. (2013). Active citizenship, education and service learning. *Education, Citizenship and Social Justice, 8*(2), 185–199. doi.org/10.1177/1746197913483683
- Bischoff, K. (2016). The civic effects of schools: Theory and empirics. *Theory and Research in Education, 14*(1), 91–106. doi.org/10.1177/1477878515619794
- Bronfenbrenner, U. (1979). *The ecology of human development experiments by nature & design*. Harvard University Press.
- Byrne, B. M. (2010). *Structural equation modeling with Mplus basic concepts, applications, and programming*. Taylor & Francis Ltd.
- Campbell, D. E. (2006). *Why we vote : how schools and communities shape our civic life*. Princeton University Press.
- Campbell, D. E. (2008). Voice in the classroom: How an open classroom climate fosters political engagement among adolescents. *Political Behavior, 30*(4), 437–454. doi.org/10.1007/s11109-008-9063-z
- Campbell, D. E., & Niemi, R. G. (2016). Testing civics: State-level civic education requirements and political knowledge. *American Political Science Review, 110*(3), 495–511. doi.org/doi:10.1017/S0003055416000368
- Campbell, Levinson, & Hess. (2012). *Making civics count: Citizenship education for a new generation*. Cambridge, MA: Harvard Education Press.
- Castillo, J. C., Miranda, D., Bonhomme, M., Cox, C., & Bascopé, M. (2014). Mitigating the political participation gap from the school: the roles of civic knowledge and classroom climate. *Journal of Youth Studies, 18*(1), 16–35.
- Claes, E., Maurissen, L., & Havermans, N. (2017). Let's talk politics: which individual and classroom compositional characteristics matter in classroom discussions? *Young, 25*(4), 1–18. doi.org/10.1177/1103308816673264
- Cohen, J., McCabe, M., Michelli, N., & Pickeral, T. (2009). School climate: Research, policy, practice, and teacher education. *Teachers College Record, 111*(1), 180–213.
- Crick, B. (2008). Democracy. In J. Arthur, I. Davies, & C. L. Hahn (Eds.), *SAGE Handbook of Education for Citizenship and Democracy* (pp. 13–19). SAGE Publications.
- Dalton, R. J. (2008). *The good citizen: How a younger generation is reshaping American politics*. Washington: CQ Press.
- Dalton, R. J., & Welzel, C. (2014). *The Civic Culture Transformed: From Allegiant to Assertive Citizenship*. New York.
- Debnam, K. J., Pas, E. T., Bottiani, J., Cash, A. H., & Bradshaw, C. P. (2015). An examination of the association between observed and self-reported culturally proficient teaching practices. *Psychology in the Schools, 52*(6), 533–548. doi.org/10.1002/pits.21845
- Dewey, J. (1913). *The school and society* (11th impr.). Chicago: Chicago (Ill.) : University of Chicago press.
- Dewey, J. (1938). *Experience and education*. New York: Simon & Schuster.
- Diazgranados, S., & Sandoval-Hernandez, A. (2015). Young people's attitudes toward equal rights for ethnic/racial: Minorities and immigrants: The effect of contact and supportive school environments in the European Union. In M. M. Isac (Ed.), *Tolerance through education: Mapping the determinants of young people's attitudes toward equal rights for immigrants and ethnic/racial minorities in Europe*. (pp. 75–109). Luxembourg: European Union.
- Dijkstra, A. B., Geijsel, F., Ledoux, G., van der Veen, I., & ten Dam, G. (2015). Effects of school quality, school citizenship policy, and student body composition on the acquisition of citizenship competences in the final year of primary education. *School Effectiveness and School Improvement, 26*(4), 524–553. doi.org/10.1080/09243453.2014.969282
- Ekman, J. (2013). Schools, democratic socialization and political participation: political activity and passivity among Swedish youths. *Nordidactica: Journal of Humanities and Social Science Education, 1*(2013–1), 1–11. Retrieved from www.kau.se/nordidactica
- Eurydice. (2005). *Citizenship education at school in Europe*. Brussels: Eurydice.
- Eurydice. (2012). *Citizenship education in Europe*. Brussels: Eurydice.

- Eurydice. (2017). *Citizenship education at school in Europe - 2017*. Luxembourg.
- Ferráns, S. D., & Selman, R. (2014). How students' perceptions of the school climate influence their choice to upstand, bystand, or join perpetrators of bullying. *Harvard Educational Review*, 84(2), 162–187. doi.org/10.17763/haer.84.2.h4883134101651mm
- Flanagan, C. A., & Stout, M. (2010). Developmental patterns of social trust between early and late adolescence: Age and school climate effects. *Journal of Research on Adolescence*, 20(3), 748–773. doi.org/10.1111/j.1532-7795.2010.00658.x
- Galston, W. A. (2001). Political knowledge, political engagement, and civic education. *Annual Review of Political Science*, 4(1), 217–234. doi.org/10.1146/annurev.polisci.4.1.217
- Geboers, E., Geijsel, F., Admiraal, W., & Dam, G. ten. (2013). Review of the effects of citizenship education. *Educational Research Review*, 9, 158–173. doi.org/doi.org/10.1016/j.edurev.2012.02.001
- Gilleece, L., & Cosgrove, J. (2012). Student civic participation in school: What makes a difference in Ireland? *Education, Citizenship and Social Justice*, 7(3), 225–239. doi.org/10.1177/1746197912448715
- Glover, D., & Coleman, M. (2005). School culture, climate and ethos: interchangeable or distinctive concepts? *Journal of In-Service Education*, 31(2), 251–272. doi.org/10.1080/13674580500200278
- Hamre, B. K., & Pianta, R. C. (2006). Student-teacher relationships. In G. G. Bear & K. M. Minke (Eds.), *Children's needs III: Development, prevention, and intervention*. (pp. 59–71). Washington, DC, US: National Association of School Psychologists.
- Himmelmann, G. (2013). Competences for teaching, learning and living democratic citizenship. In M. Print & D. Lange (Eds.), *Civic Education and Competences for Engaging Citizens in Democracies* (pp. 3–7). SensePublishers.
- Homana, G., Barber, C., & Torney-Purta, J. (2006). *Assessing school citizenship education climate: Implications for the social studies* (Circle working paper No. 48). Maryland.
- Hooghe, M., & Dassonneville, R. (2013). Voters and candidates of the future: The intention of electoral participation among adolescents in 22 European countries. *Young*, 21(1), 1–28. doi.org/10.1177/1103308812467664
- Hooghe, & Stiers. (2016). Elections as a democratic linkage mechanism: How elections boost political trust in a proportional system. *Electoral Studies*, 44, 46–55. doi.org/doi.org/10.1016/j.electstud.2016.08.002
- Hoskins, B. (2013). What does democracy need from its citizens? In M. Print & D. Lange (Eds.), *Civic education and competences for engaging citizens in democracies* (pp. 23–35). SensePublishers.
- Hoskins, B., Janmaat, J. G., & Villalba, E. (2012). Learning citizenship through social participation outside and inside school: an international, multilevel study of young people's learning of citizenship. *British Educational Research Journal*, 38(3), 419–446. doi.org/10.1080/01411926.2010.550271
- Hu, L., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal*, 6(1), 1–55. doi.org/10.1080/10705519909540118
- Inglehart, R. (1997). *Modernization and postmodernization: Cultural, economic, and political change in 43 societies*. Princeton University Press.
- Isac, M. M., Maslowski, R., Creemers, B., & van der Werf, G. (2014). The contribution of schooling to secondary-school students' citizenship outcomes across countries. *School Effectiveness and School Improvement*, 25(1), 29–63. doi.org/10.1080/09243453.2012.751035
- Jackson, P. (1968). *Life in classrooms*. New York: Holt.
- Jennings, K., & Niemi, G. (1968). The transmission of political values from parent to child. *American Political Science Review*, 62(1), 169–184.
- Jennings, P. A., & Greenberg, M. T. (2009). The prosocial classroom: Teacher social and emotional competence in relation to student and classroom outcomes. *Review of Educational Research*, 79(1), 491–525. doi.org/10.3102/0034654308325693
- Jöreskog, K. G. (1999). How large can a standardized coefficient be? *Scientific Software International*, 3. Retrieved from www.ssicentral.com/lisrel/techdocs/HowLargeCanaStandardizedCoefficientbe.pdf
- Keating, A., & Janmaat, J. G. (2015). Education through citizenship at school: Do school activities have a lasting impact on youth political engagement? *Parliamentary Affairs*, 69(2), 409–429. http://doi.org/10.1093 / pa / gsv017
- Keating, & Benton. (2013). Creating cohesive citizens in England? Exploring the role of diversity, deprivation and democratic climate at school. *Education, Citizenship and Social Justice*, 8(2), 165–184. doi.org/10.1177/1746197913483682
- Klein, J., Cornell, D., & Konold, T. (2012). Relationships between bullying, school climate, and student risk behaviors. *School Psychology Quarterly*, 27(3), 154–169. doi.org/10.1037/a0029350

- Kline, R. B. (2011). *Principles and practices of structural equation modeling*. New York: The Guilford Publications.
- Kohl, D., Recchia, S., & Steffgen, G. (2013). Measuring school climate: an overview of measurement scales. *Educational Research*, 55(4), 411–426. doi.org/10.1080/00131881.2013.844944
- Kolb, D. E. (1984). *Experiential learning : Experience as the source of learning and development*. Englewood Cliffs (N.J): Prentice Hall.
- Krumpal, I. (2013). Determinants of social desirability bias in sensitive surveys: a literature review. *Quality & Quantity*, 47(4), 2025–2047. doi.org/10.1007/s11135-011-9640-9
- Langton, K. P., & Jennings, M. K. (1968). Political socialization and the high school civics curriculum in the United States. *American Political Science Review*, 62(3), 852–867. Retrieved from www.jstor.org/stable/1953435
- Lenzi, M., Vieno, A., Sharkey, J., Mayworm, A., Scacchi, L., Pastore, M., & Santinello, M. (2014). How school can teach civic engagement besides civic education: The role of democratic school climate. *American Journal of Community Psychology*, 54(3), 251–261. doi.org/10.1007/s10464-014-9669-8
- Lester, L., & Cross, D. (2015). The relationship between school climate and mental and emotional wellbeing over the transition from primary to secondary school. *Psychology of Well-Being*, 5(1), 9. doi.org/10.1186/s13612-015-0037-8
- Maitles, H. (2010). Citizenship initiatives and pupil values: a case study of one Scottish school's experience. *Educational Review*, 62(4), 391–406.
- Maitles, H., & Cowan, P. (2012). It reminded me of what really matters?: teacher responses to the Lessons from Auschwitz Project. *Educational Review*, 64(2), 131–143. doi.org/10.1080/00131911.2010.537314
- Manganelli, S., Lucidi, F., & Alivernini, F. (2014). Adolescents' expected civic participation: the role of civic knowledge and efficacy beliefs. *Journal of Adolescence*, 37(5), 632–41. doi.org/10.1016/j.adolescence.2014.05.001
- Manganelli, S., Lucidi, F., & Alivernini, F. (2015). Italian adolescents' civic engagement and open classroom climate: The mediating role of self-efficacy. *Journal of Applied Developmental Psychology*, 41, 8–18. doi.org/10.1016/j.appdev.2015.07.001
- Manning, N., & Edwards, K. (2014). Does civic education for young people increase political participation? A systematic review. *Educational Review*, 66(July 2014), 22–45. doi.org/10.1080/00131911.2013.763767
- Marien, S., Hooghe, M., & Quintelier, E. (2010). Inequalities in non-institutionalised forms of political participation: A multi-level analysis of 25 countries. *Political Studies*, 58(1), 187–213.
- Maurissen, L. (2016). Contextual Predictors of Students' Perception of an Open Classroom Climate. In *American Political Science Association* (p. 17). Philadelphia.
- Maurissen L. (2017). Classroom discussions and political tolerance towards immigrants: The importance of mutual respect and responsiveness. *IEA International Research Conference* (p. 18). Prague.
- McLaughlin, T. (2005). The educative importance of ethos. *British Journal of Educational Studies*, 53(3), 306–325. doi.org/10.1111/j.1467-8527.2005.00297.x
- Mehta, P. D., & Neale, M. C. (1987). People are variables too: Multilevel structural equations modeling. *Muthén & Satorra Raudenbush & Sampson Du Toit & Du Toit*, 10(3), 259–284.
- Muthén, L. K., & Muthén, B. O. (2015). *Mplus: statistical analysis with latent variables - user's guide* (Seventh Ed). Los Angeles, CA: Muthén & Muthén.
- Naval, C., & Ugarte, C. (2012). The development of civic competencies at secondary level through service-learning pedagogies. In M. Print & D. Lange (Eds.), *Schools, Curriculum and Civic Education for Building Democratic Citizens* (pp. 99–112). Rotterdam: SensePublishers.
- Niemi, G., & Sobieszek, B. (1977). Political socialization. *Annual Review of Sociology*, 3, 209–233.
- Niemi, R. G., & Hepburn, M. A. (1995). The rebirth of political socialization. *Perspectives on Political Science*, 24(1), 7–16. doi.org/10.1080/10457097.1995.9941860
- Niemi, R. G., & Klingler, J. D. (2012). The development of political attitudes and behaviour among young adults. *Australian Journal of Political Science*, 47(1), 31–54. doi.org/10.1080/10361146.2011.643167
- Niemi, & Junn. (1998). *Civic education: What makes students learn*.
- Persson, M. (2015). Education and Political Participation. *British Journal of Political Science*, 45(3), 689–703. doi.org/10.1017/S0007123413000409
- Quintelier, E. (2010). The effect of schools on political participation: a multilevel logistic analysis. *Research Papers in Education*, 25(2), 137–154. doi.org/10.1080/02671520802524810
- Quintelier, E., & Hooghe, M. (2013). The relationship between political participation intentions of adolescents and a participatory democratic climate at school in 35 countries. *Oxford Review of Education*, 39(5), 567–589. doi.org/10.1080/03054985.2013.830097
- Sampermans D., & Claes, E. (forthcoming). Teachers as Role Models in the Political Socialization Process: How a good Student-Teacher Relationship can Compensate for Gender Differences in Students' Gender Equality Attitudes. *Citizenship Teaching and Learning*.

- Sampermans D. (2017). School Climate in Europe: A Cross-Cultural Concept Including Multiple Dimensions and Actors. *PoliticoGenetmaal*. Leiden.
- Scheerens, J. (2011). Indicators on informal learning for active citizenship at school. *Educational Assessment, Evaluation and Accountability*, 23(3), 201–222. doi.org/10.1007/s11092-011-9120-8
- Schulz, W., Ainley, J., Fraillon, J., Losito, B., & Agrusti, G. (2016). *IEA international civic and citizenship education study 2016: Assessment framework*. Amsterdam.
- Schulz, Ainley, Fraillon, & Friedman. (2011). *ICCS 2009 technical report*. Amsterdam: International Association for the Evaluation of Educational Achievement.
- Shernoff, D. J. (2013). *Optimal learning environments to promote student engagement*. New York: Springer New York.
- Sloam, J. (2014). New voice, less equal. *Comparative Political Studies*, 47(5), 663–688. doi.org/10.1177/0010414012453441
- Thapa, A., Cohen, J., Guffey, S., & Higgins-D'Alessandro, A. (2013). A review of school climate research. *Review of Educational Research*, 83(3), 357–385. doi.org/10.3102/0034654313483907
- Torney-Purta, J. (2002). The School's Role in Developing Civic Engagement: A Study of Adolescents in Twenty-Eight Countries. *Applied Developmental Science*, 6(4), 203–212. doi.org/10.1207/S1532480XADS0604_7
- Torney-Purta, J., Barber, C. H., & Wilkenfeld, B. (2007). Latino Adolescents? Civic Development in the United States: Research Results from the IEA Civic Education Study. *Journal of Youth and Adolescence*, 36(2), 111–125. doi.org/10.1007/s10964-006-9121-y
- Torney-Purta, J., Lehmann, R., Oswald, H., & Schulz, W. (2000). *Citizenship and education in twenty-eight countries: Civic knowledge and engagement at age fourteen*. IEA Secretariat.
- Torney-Purta, J., Schwille, J., & Amadeo, J.-A. (1999). *Civic education across countries: twenty-four national case studies from the IEA civic education project*. IEA.
- Voight, A., & Nation, M. (2016). Practices for Improving Secondary School Climate: A Systematic Review of the Research Literature. *American Journal of Community Psychology*, 174–191. doi.org/10.1002/ajcp.12074
- Wang, M.-T., & Degol, J. L. (2016). School climate: a review of the construct, measurement, and impact on student outcomes. *Educational Psychology Review*, 28(2), 315–352. doi.org/10.1007/s10648-015-9319-1
- Wentzel, K. R. (1997). Student motivation in middle school: The role of perceived pedagogical caring. *Journal of Educational Psychology*, 89(3), 411–419. doi.org/10.1037/0022-0663.89.3.411
- Wilkenfeld, B., & Torney-Purta, J. (2012). A Cross-Context Analysis of Civic Engagement Linking CIVED and U.S: Census Data. *Journal of Social Science Education*, 11(1), 64–80. doi.org/10.4119/UNIBI/jsse-v11-i1-1192
- Wren, D. J. (1999). School culture: exploring the hidden curriculum. *Adolescence*, 34(135), 593–6. Retrieved from www.ncbi.nlm.nih.gov/pubmed/10658866
- Zuehlke, O., & Vandenplas, C. (2009). Sampling weights and participation rates. In *ICCS 2009 technical report* (pp. 69–87). Amsterdam: IEA Secretariat.



Appendix 1: Multilevel SEM model of the school climate

The predicted multilevel school climate model is a strong model. Fit indices show a strong model fit: chi-square=32,73 CFI=0.99 and SRMR within=0.01 and SRMR between=0.05.

The factor loadings on the within level are low and vary between 0.38 and 0.41. This is an indication that the school climate on the individual level is not measured correctly by these three indicators. These three individual perceptions are not a good representation of the individual school climate perception. The between level factor loadings are higher, they vary between 0.73 and 0.97. Therefore, we can conclude that the between level measurement of school climate dimensions and the school climate are good predictors in the estimated model.

The intra-class correlation of this estimated model is 14.5 percent. This indicates that 14.5 percent of the variance of students' electoral participation can be explained by school level variables.

	Ireland + England
N observations	6267
Within Level	
Factor loading of students' perception of openness in classroom discussions (OPDISC) on the school climate	0.411***
Factor loading of students' perception of student-teacher relations at school (STREL) on the school climate	0.379***
Factor loading of students' participation at school (PRTSCH) on the school climate	0.490***
Correlation of OPDISC with STREL	0.269***
Within level regression of school climate on students' expected electoral participation	0.579***
Between level	
Factor loading of teachers' perceptions of social problems at school (TSCPROB) on the schools' order	0.793***
Factor loading of teachers' perception of student behavior at school (TSTSBEH) on the schools' order	0.748***
Factor loading of students' perception of student-teacher relations at school (STREL) on the relational dimension	0.728***
Factor loading of teachers' perceptions of classroom climate (TCLCLIM) on the relational dimension	0.754***
Factor loading of students' perception of openness in classroom discussions (OPDISC) on teaching and learning dimension	0.828***
Factor loading of students' participation at school (PRTSCH) on teaching and learning dimension	0.828***
Factor loading of schools' order on the school climate	0.973***
Factor loading of relationships in school on the school climate	0.890***
Factor loading of teaching and learning on the school climate	0.937***
Correlation of OPDISC with STREL	0.570***
Correlation of TCLCLIM with TSTSBEH	0.517***
Correlation of TSTSBEH with TSCPROB	0.429***
Between level regression of school climate on students' expected electoral participation	0.613***

Source: ICCS 2009. Standardized results from a Mplus analysis using school- and student level weights. Measurements on the school level are aggregated: $\chi^2=32,732$ df(12), CFI=0.986, SRMR within=0.010, SRMR between=0.048. Significant values *** p=0.001, ** significant p=0.01, * significant p=0.05.



Appendix 2: Measurement invariance test England and Ireland

First, it is important to take into consideration that actually there are not enough observations in each case (England versus Ireland) to perform a measurement invariance test between the two conditions. In fact, it is better to have more than 250 observations on each level (Hu & Bentler, 1999). This can cause the model fit problems shown by the fit indices. The SRMR indicates a good model fit, but the CFI is too low as it should be above 0.95 (Byrne, 2010; Kline, 2011). Therefore, we must be careful while interpreting the results. Yet, we believe England and Ireland are comparable because the factor loadings, correlations and the regression part in Table A below show significant and comparable results for each of the regions.

Table A: Scalar invariance test school climate model in England and Ireland

	Ireland	England
N observations	145	126
Factor loading of teachers' perceptions of social problems at school (TSCPROB) on the schools' order	0.626***	0.752***
Factor loading of teachers' perception of student behavior at school (TSTSBEH) on the schools' order	0.675***	0.730***
Factor loading of students' perception of student-teacher relations at school (STREL) on the relational dimension	0.486***	0.653***
Factor loading of teachers' perceptions of classroom climate (TCLCLIM) on the relational dimension	0.584***	0.757***
Factor loading of students' perception of openness in classroom discussions (OPDISC) on teaching and learning dimension	0.841***	0.778***
Factor loading of students' participation at school (PRTSCH) on teaching and learning dimension	0.721***	0.742***
Factor loading of schools' order on the school climate	0.962***	0.969***
Factor loading of relationships in school on the school climate	0.827***	0.899***
Factor loading of teaching and learning on the school climate	0.950***	0.951***
Correlation of OPDISC with STREL	0.412***	0.798***
Correlation of TCLCLIM with TSTSBEH	0.347**	0.405***
Correlation of TSTSBEH and TSCPROB	0.595***	0.438***
Regression of school climate on students' expected electoral participation	0.671***	0.560***
X²/country	45,605	44,291

Source: ICCS 2009. Standardized Results from a Mplus analysis using aggregated measurements and school level weights: $\chi^2=89,896$, CFI=0.916, SRMR=0.075 significant values *** p=0.001, ** significant p=0.01, * significant p=0.05, n.s.= not significant.

Appendix 3: Teachers' perceptions of social problems at school

Teachers were asked to indicate how frequently (“never”, “sometimes”, “often”, “very often”) students experience social problems at their school considering the following topics:

- a) Vandalism
- b) Truancy
- c) Racism
- d) Religious intolerance
- e) Bullying
- f) Violence
- g) Sexual harassment
- h) Drug abuse
- i) Alcohol abuse

Appendix 4: Teachers' perception of student behavior at school

Teachers were asked to state how many students (“all or nearly all”, “most of them”, “some of them”, “none or hardly any”) exhibit the behavior indicated in the following items:

- a) Are students well behaved on entering and leaving the school premises?
- b) Do they have a positive attitude towards their own school?
- c) Do they have a good relationship with the school teachers and staff?
- d) Do they care for school facilities and equipment?
- e) Are students well behaved during breaks?
- f) Do they show they feel part of the school community?

Appendix 5: Students' perception of the Student-teacher relationship

Students are asked to "strongly agree", "agree", "disagree", or "strongly disagree" with the statements:

- a) Most of my teachers treat me fairly;
- b) Students get along well with most teachers;
- c) Most teachers are interested in students' well-being;
- d) Students can choose current, political topics themselves to discuss in class;
- e) Most of my teachers really listen to what I have to say;
- f) If I need extra help, I will receive it from my teachers;
- g) Teachers discuss different sides of the topics they explain these in class. (not included in the scale)

Appendix 6: Teachers' perceptions of classroom climate

Teachers were asked to rate how many of their students ("all or nearly all", "most of them", "some of them", "none or hardly any") interacted with the class and other students considering the following questions:

- a) Do students get on well with their classmates?
- b) Are students well integrated in the class
- c) Do students respect their classmates even if they are different?

Appendix 7: Students' perception of openness in classroom discussions

Students were asked how frequently ("never," "rarely," "sometimes," "often") social and political issues were discussed during lessons:

- a) Teachers encourage students to make up their own minds
- b) Teachers encourage students to express their opinions
- c) Students bring up current political events for discussion in class
- d) Students express opinions in class even when their opinions are different from most of the other students
- e) Teachers encourage students to discuss the issues with people having different opinions
- f) Teachers present several sides of the issues when explaining them in class

Appendix 8: Students' participation at school

Students were asked how participated in civics related activities ("within the last twelve months," "more than a year ago," or "never."):

- a) Voluntary participation in school-based music or drama activities outside of regular lessons
- b) Active participation in a debate
- c) Voting for <class representative> or <school parliament> Taking
- d) Taking part in decision-making about how the school is run
- e) Taking part in discussions at a <student assembly>
- f) Becoming a candidate for <class representative> or <school parliament>

Appendix 9: Regression model – including control variables

	Model I		Model II	
	coefficient (SE)	β	coefficient (SE)	β
Intercept	26.691 (0.468)***		8.590 (0.834)***	
Knowledge	0.038 (0.001)***	0.547	0.028(0.001)***	0.404
Gender (boy=0/girl=1)	-0.766(0.255)***	0.044	-1.433(0.196)***	-0.083
Home literature	0.970(0.100)***	0.171	0.518 (0.099) ***	0.092
Absence problems in school			0.145(0.015)***	0.183
Positive social behavior			-0.163(0.014)***	-0.238
Student-teacher relationship			0.274(0.016)***	0.218
Student-student relationship			0.056(0.016)***	0.056
Classroom discussions			-0.053(0.017)**	-0.049
School level participation			0.266(0.014)***	0.218
R ²	0.469		0.569	
ΔR^2			0.100	

Source: ICCS 2009: Aggregated measurements from the student- and teacher questionnaires n=252, including school level weights. Dependent=future electoral participation.

Endnotes

¹ We acknowledge that a Cronbach Alpha between 0.50 and 0.60 can be considered as poor and we urge the reader to interpret the results with caution. Yet we choose to keep these scales in the analysis in order to ensure international replicability of results. The ICCS 2009 technical report (Schulz et al., 2011) indicates a median international reliability of Cronbach Alpha 0.78.

² In Appendix 1 a multilevel analysis of the school climate is included. This model shows a construct on the school level that is in line with the theoretical expectations of the school climate concept and in line with the aggregated school level observation that we discuss later in this article. On the individual level, the low factor loadings show that the individual level data does not fit the school level expectations. This confirms that it is a positive choice to connect school level expectations of the school climate with school level observations.

³ The Chi-square statistics in SEM are very sensitive to the sample size and therefore easily result in significant values. Therefore it is more interesting to assess also other fit indicators and a combination of fit indicators (Hu & Bentler, 1999; Mehta & Neale, 1987)

⁴ In CFA the factor loadings need to be perceived as regression coefficients and not correlates. The misunderstanding probably stems from classing EFA where factor loadings are correlations (Jöresko, 1999).

⁵ We remind the reader that these analyses are conducted on data aggregated at the school level and that multilevel variance partitioning shows that 14.5 percent of the variance lays on the school level.

⁶ If we perform the same analyses using the other plausible values, the results do not change.