

**Profiles of Adolescents' Perceptions of Democratic Classroom Climate and Students' Influence: The
Effect of School and Community Contexts**

Frank Reichert, Jiaxin Chen, & Judith Torney-Purta

Author Affiliation

- Frank Reichert, Postdoctoral Fellow, Faculty of Education, University of Hong Kong
- Jiaxin Chen, Postdoctoral Fellow, National Institutes on Education and the Economy, East China Normal University
- Judith Torney-Purta, Professor Emerita of Human Development and Quantitative Methodology, University of Maryland, College Park

Research Interests

- Frank Reichert is a postdoctoral fellow at the Faculty of Education, The University of Hong Kong. His primary field of interest is political psychology, and he is particularly interested in research on youth development, civic education and political participation, as well as social identity and immigration.
- Jiaxin Chen is a postdoctoral fellow at the National Institutes on Education and the Economy, East China Normal University. Her major research interests are education inequality, education for migration, citizenship education, and critical pedagogy.
- Judith Torney-Purta, Ph.D., is a developmental psychologist and Professor Emerita from the University of Maryland, College Park. She participated in the early political socialization research of the 1960s. Then her research interests moved toward the psychology of civic engagement, and she led the IEA CIVED cross-national study. She is currently an advisor to the CivicLEADS Project, which encourages secondary analysis of archived data.

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Author Contact Information

Frank Reichert (corresponding author)

Room 217, Runme Shaw Building, Faculty of Education, The University of Hong Kong, Pok Fu

Lam Road, Hong Kong, Hong Kong SAR

Phone: +852 2241 5571

Email: reichert@hku.hk

Jiaxin Chen

Room 433, Physics Building, National Institutes on Education and the Economy, East China Normal University,

Zhongshan North Road 3663, Shanghai, China

Phone: +86 (0) 21 6223 5215

Email: jxchen881116@163.com

Judith Torney-Purta

8806 Bovelder Dr., Laurel, MD 20708 United States of America

Phone: +1 301 210 3115

Email: jtpurta@umd.edu

1 **Profiles of Adolescents' Perceptions of Democratic Classroom Climate and Students' Influence: The**
2 **Effect of School and Community Contexts**

3 **Abstract**

4 Students' learning experiences and outcomes are shaped by school and classroom contexts. Many studies have
5 shown how an open, democratic classroom climate relates to learning in the citizenship domain and helps
6 nurture active and engaged citizens. However, little research has been undertaken to look at how such a
7 favorable classroom climate may work together with broader school factors. The current study examines data
8 from 14,292 Nordic ninth graders (51% female) who had participated in the International Civic and Citizenship
9 Education Study in 2009, as well as contextual data from 5,657 teachers and 618 principals. Latent class
10 analysis identifies profiles of students' perceptions of school context, which are further examined with respect to
11 the contextual correlates at the school level using two-level fixed effects multinomial regression analyses. Five
12 distinct student profiles are identified and labeled "alienated", "indifferent", "activist", "debater", and
13 "communitarian." Compared to indifferent students, debaters and activists appear more frequently at schools
14 with relatively few social problems; being in the communitarian group is associated with aspects of the wider
15 community. Furthermore, being in one of these three groups (and not in the indifferent group) is more likely
16 when teachers act as role models by engaging in school governance. The results are discussed within the
17 framework of ecological assets and developmental niches for emergent participatory citizenship. The
18 implications are that adults at school could enhance multiple contexts that shape adolescents' developmental
19 niches to nurture active and informed citizens for democracies.

20 **Keywords**

21 classroom climate; developmental niche; efficacy at school; person-centered analysis; student voice; youth civic
22 engagement

23

Introduction

24 In many democratic countries, a major goal of schooling is to prepare active and engaged citizens who
25 contribute to decision-making in their societies and communities. Schools can foster this goal by formal and
26 informal means, and many studies have shown that positive school climates that encourage students to share
27 their opinions and shape aspects of their schools are important in the academic and civic development of
28 students (Mager and Nowak 2012). Schools with positive school and classroom climates are characterized by
29 principals, teachers and other staff who value students' contributions to school life and provide "genuine
30 opportunities for collaboration, cooperation and communication" (Homana et al. 2006, p. 7). According to
31 Barber et al. (2015a) and Knowles et al. (in press), students who perceive that their school provides such a
32 favorable climate are more likely to be interested in politics, to trust civic institutions, to feel politically
33 efficacious and to intend to participate in legal forms of political behavior; they are less likely to engage in
34 illegal political protest. Hence, schools in democratic societies have strong incentives to provide a positive
35 school and classroom environment.

36 How do students differ in their perceptions of the democratic climate at their school, and what contextual
37 variables explain these differences in students' perceptions? The analysis of students' perceptions of school
38 climate is important, because people usually act in accordance with their perceptions of others, their perceived
39 control over their behaviors and their own goals (Ajzen 2001). Fostering educational outcomes is enhanced
40 when school leaders understand the perspectives and beliefs of students (as well as those of teachers). A school
41 environment designed to be supportive can promote civic development and participation effectively only to the
42 extent that adolescents themselves perceive that school climate as open for student voice.

43 It was the goal of the current study to identify distinct groups or clusters of students characterized by
44 different patterns or profiles in their perceptions of school context using a person-centered statistical approach.
45 A person-centered approach enables researchers to identify groups of students characterized by distinct and
46 similar patterns in their perceptions of school climate, and it better accounts for potential heterogeneity than
47 variable-centered approaches (Collins and Lanza 2010).

48 A limitation of previous studies is that most have examined students' perceptions of school context as
49 individual predictors of other variables, such as civic knowledge or expected participation (Knowles et al. in
50 press). A nuanced analysis of the contextual effects on these perceptions is missing in the literature, and the
51 extent to which patterns of contextual factors and students' perceptions of school climate are associated with
52 valued outcomes remains unclear. Yet as Eckstein and Noack (2014) analyzing longitudinal data from three age

53 cohorts of German adolescents suggest, contextual factors should be seriously considered when studying
54 adolescents' civic development. Characteristics of the community context can have indirect effects on the civic
55 development of young people through adolescents' perceptions of their schools' contexts. A second goal of the
56 current analysis was therefore to examine the school-level and community-level correlates of distinct profiles of
57 students' perceptions of school climate.

58 This article addresses these goals using data collected in 2009 from nationally representative samples of
59 ninth grade students in four countries with well-developed structures for democratic school participation and
60 decision-making: Denmark, Finland, Norway, and Sweden. Despite some differences among the Nordic
61 societies, this context provides a suitable background for analyzing differential perceptions of school climate
62 and how contextual variables relate to these distinct perceptions. Among other reasons, these countries have
63 long histories of stable representative, parliamentary democratic traditions. Further, their educational policies,
64 schools and curricula emphasize the value of civic education (Gilljam et al. 2010), and their citizens are better
65 prepared to participate in politics and less likely to be politically alienated than citizens of many other countries
66 (Amnå and Zetterberg 2010; Dahl et al. 2017). Although student voice and participation at school is valued in
67 such contexts according to the policy documents, the ideal of student participation may not be fully realized at
68 the local level (Blossing et al. 2014). In other words, students may not perceive the welcoming climate for their
69 voices and participation at school that the policy documents and curricula prescribe.

70 This analysis is framed within aspects of ecological frameworks of civic and human development. The
71 study utilizes the concept of "ecological assets" (e.g., Theokas and Lerner 2006) commonly referred to in
72 research on positive youth development. Schools can be compared to ecological systems situated in their
73 communities where multiple assets may help students to develop their strengths (or prevent them from doing
74 so). Furthermore, this analysis is also framed by the "developmental niches model" that explicitly links students'
75 political socialization and citizenship engagement to the contexts in which they develop (Torney-Purta and
76 Amadeo 2011). These approaches provide more meaningful interpretations of students' perceptions of the
77 school context than previous studies; they also offer evidence that these perceptions and civic development are
78 related to the available ecological assets.

79 **Developmental Niches for Emergent Participatory Citizenship**

80 Contemporary literature on youth development focuses on the associations between individual development and
81 contextual factors. According to Torney-Purta and Amadeo (2011), adolescents' participation in civic and
82 political life can be labeled as "emergent participatory citizenship". Although adolescents cannot participate in

83 political life as adults do, they can develop the knowledge, skills and dispositions essential for future
84 engagement and participation as adult citizens through their present participation in the civic and political
85 activities available to them (Barber et al. 2015b). Furthermore, these researchers argue that emergent
86 participatory citizenship develops in a particular *niche*. There are a number of dimensions to this niche that can
87 reinforce each other, some reflecting present circumstances in which the young person is developing and other
88 reflecting the past (e.g., traditions of a particular group). Torney-Purta and Amadeo (2011), based on a review of
89 qualitative studies, propose an ecological model that is particularly designed to frame the civic development of
90 adolescents.

91 Specifically, Torney-Purta and Amadeo (2011) identified three dimensions of developmental niches
92 contributing to emergent participatory citizenship. First, they identified settings that are directly relevant to
93 adolescents' development, such as characteristics that are unique to them and their families (e.g., ethnicity or
94 how individuals in a family interact); characteristics that may be shared within a local community (e.g.,
95 economic resources, opportunities for civic engagement); and schools, where they may (or may not) be offered
96 opportunities to practice forms of participation that can strengthen their sense of efficacy and help them develop
97 a civic identity. Based on the results of a secondary analysis of survey data from ten countries, Torney-Purta and
98 Barber (2011) emphasize that positive social interactions in these everyday settings have the potential to prevent
99 alienation from politics. This finding aligns with reviews of research that argue that a civic identity develops in
100 social interactions within everyday contexts (Carretero et al. 2016), and that collective activities over time based
101 on shared rules (i.e. involvement in "communities of practice") foster such development (Homana in press).

102 Second, Torney-Purta and Amadeo (2011) note that parents and educators attempt to organize
103 developmental niches in line with their own experiences, affiliations, and the economic, educational, and social
104 resources that are available to them. Torney-Purta and Barber (2011) also emphasize the role of adults' beliefs
105 in the civic development of adolescents. Longitudinal survey research on African-American and Latino
106 adolescents in the US utilizing this model further suggests that social interactions with teachers and aspects of
107 the school and classroom climate can support the development of positive civic engagement (Jagers et al. 2017).

108 Finally, societal customs and cultural beliefs determine some characteristics of the developmental niche.
109 Torney-Purta and Amadeo (2011) and Torney-Purta and Barber (2011), for example, refer to mandatory civic
110 education in schools, limitations on speaking openly about social and political issues, or a belief that educators
111 should not express partisan points of view. In addition, characteristics of the individual adolescent also influence

112 the developmental niche and, hence, the development of the qualities essential for future participation. The
113 development of emergent participatory citizenship to a large extent depends on “external” and “internal” assets.

114 Applied to the civic realm, the developmental assets framework suggests that the civic development of
115 young people can be enhanced if ecological (external) assets, such as social networks and access to resources in
116 their families, schools and communities, align with or promote adolescents’ individual strengths (i.e. internal
117 assets) (Lerner et al. 2014). Assets can also be generated by providing opportunities for adolescents to actively
118 engage with their environments. Thereby, positive youth development can be stimulated and result in
119 adolescents’ contributions to society, such as civic engagement that is in accordance with a democratic political
120 process, and at the same time lessen anti-social behaviors (Lerner et al. 2014; Torney-Purta et al. 2007).

121 **School Climate and Emergent Participatory Citizenship**

122 Schools are an important developmental niche for emergent participatory citizenship; adolescents are responsive
123 to both curricular influences and the participatory climate (Eckstein and Noack 2016). In fact, the school climate
124 has been identified as an important asset for the academic and civic development of adolescents (Barber et al.
125 2015a; Mager and Nowak 2012). Students who share beliefs with other school members, are aware of and
126 respect school rules, and sense that they are valued at school have the potential to develop character and school
127 connectedness, which have been identified as protective factors for positive youth development (Torney-Purta et
128 al. 2007). The present study focusses on an open classroom climate for discussion and on opportunities for
129 students to participate more broadly in interconnected aspects of a school’s overall climate (see also Eckstein
130 and Noack 2014): Schools with a positive climate value students input both in the form of active engagement
131 and the sharing of views about issues, which support positive civic development (Torney-Purta and Amadeo
132 2011; Torney-Purta and Barber 2011).

133 **Civic knowledge.** One of the most commonly studied correlates of school and classroom climate in variable-
134 centered analyses is the association with civic and political knowledge. For example, Persson (2015) analyzed
135 panel data from Swedish adolescents who were approximately 16. He found evidence for a causal effect of
136 students’ perception of an open classroom climate on civic knowledge. In additional analyses of the cross-
137 sectional international Civic Education Study (CivEd) that collected data from 14-year-olds in 28 countries in
138 1999, Persson (2015) identified similar relationships both for the Swedish sample and across all 28 countries.
139 Analyses of the cross-sectional data from eighth graders who participated in the International Civic and
140 Citizenship Education Study (ICCS) in 38 countries in 2009 also found positive associations between both

141 classroom and school climate (considered separately) and students' levels of civic knowledge (e.g., Lin 2014;
142 Schulz et al. 2013).

143 **Civic efficacy.** Studies using the US CivEd data also found positive associations between efficacy (i.e. students'
144 perceived capacity to influence public decisions and/or the responsiveness of public institutions) and classroom-
145 level measures of open classroom climate for discussion (Barber et al. 2015a; Godfrey and Grayman 2014). A
146 multilevel analysis of data from 14 European countries in the ICCS showed that eighth graders' perceptions of
147 their classroom as open for discussion were positively associated with measures of internal political efficacy
148 (Knowles and McCafferty-Wright 2015). Manganelli et al. (2015) used the Italian sample of the ICCS and
149 found that citizenship self-efficacy mediates the effect of an open classroom climate on students' intentions to
150 engage in civic activities. This is similar to the analysis of cross-sectional data from Australian tenth graders by
151 Reichert and Print (2017a), who found that the effect of self-reported participation at school on expected
152 political participation is mediated by the perception that students' participation at school is valued.

153 **Citizenship-related attitudes.** In their variable-centered analysis of the US CivEd data, Barber et al. (2015a)
154 further found a positive association between individual students' trust in government institutions and the
155 classroom-level aggregate of openness of classroom climate. Similarly, Dassonneville et al. (2012) using panel
156 data from Belgian adolescents aged 16 and 18 years identified a positive effect of the school-level aggregate of
157 an open classroom climate on adolescents' trust in governmental institutions. Other analyses of the CivEd data
158 also found positive associations between a classroom climate that students perceive as open for discussion and
159 their support for women's rights as well as for immigrants' rights (Barber et al. 2015a; Barber et al. 2015b;
160 Torney-Purta et al. 2007).

161 **Civic participation.** Finally, analyses of the US CivEd data have shown that students who perceive their
162 classroom as more open for discussion are more likely to intend to vote in elections as adults (Campbell 2008)
163 and less prone to participate in illegal protest activities (Barber et al. 2015a). Analyses of data from 35 countries
164 that participated in the ICCS also support the view that an open classroom climate is positively associated with
165 voting intentions, legal political protest and informal political participation (Quintelier and Hooghe 2013).

166 **Conclusion.** The school climate is often conceptualized as a characteristic of the school context but frequently
167 measured using student reports. Previous research using several sources of data has identified the perceived
168 school climate as an important predictor of adolescents' civic development in multiple domains of participatory
169 citizenship. However, students' perceptions often vary significantly within a school, and there are likely to be
170 groups of students who share different perceptions of their school's climate (Shukla et al. 2016). Yet it remains

171 unclear how adolescents' perceptions of the school climate hang together or diverge, and how such patterns are
172 associated with civic development. No analysis has been conducted on patterns of adolescents' perceptions of
173 the school context as supportive for student voice and participation, and little is known about how different
174 ecological assets are associated with students' perceptions of their school's climate.

175 **Ecological Assets and Youth Development**

176 According to Theokas and Lerner (2006), the following assets can influence adolescents' development: human
177 resources (e.g., parent's education); physical and institutional resources (e.g., opportunities to engage with
178 others); joint activities; as well as ease of access to resources and safety of the environment. These assets can be
179 found in different forms in the everyday settings where adolescents are embedded and may be regarded as
180 potential predictors of school climate.

181 **Individual and family context.** Among the human assets that are associated with positive youth development
182 and likely also with the development of emergent participatory citizenship are gender, ethnicity, and
183 socioeconomic status (SES) (Li and Lerner 2011; Torney-Purta and Amadeo 2011). Li and Lerner (2011), for
184 instance, examined longitudinal data from US students over four years from grades five to eight. They found
185 lower behavioral and emotional school engagement among boys and adolescents from lower income families;
186 African Americans reported lower behavioral engagement, and Latino adolescents reported lower emotional
187 engagement, than other youths (Li and Lerner 2011). Reichert and Print (2017b), in their cross-sectional
188 analysis of data from Australian tenth grade students, report that girls perceived their schools as more supportive
189 of student participation. In their longitudinal analysis of German adolescents, Eckstein and Noack (2014) found
190 that girls in Germany reported a higher sense of community at school than boys, but there were no gender
191 differences with respect to other aspects of the school climate. Yet, Barber et al. (2015a), in their analysis of the
192 US sample from the cross-sectional CivEd study, report that girls perceived more open discussion climates at
193 school. Another analysis of these data found that boys and African American students perceived the classroom
194 climate as less open for discussion than girls and students from other ethnic backgrounds (Campbell 2007).¹
195 Finally, using the first wave of data they collected from fifth grade students in the US, Theokas and Lerner
196 (2006) also found that joint activities within a family predicted positive youth development. Shared discussions
197 with family or peers may enable adolescents to recognize opportunities to share their opinion in other settings,
198 which in turn could be associated with their perceptions of classroom and school climates.

¹ Note that data about ethnic group membership was collected as a national option and categories varied across countries, limiting the analysis possible with the CivEd and ICCS datasets.

199 **School context.** Several aspects related to the availability of school assets were considered in this analysis. On
200 one hand, research has shown that the background of the student body, also referred to as student composition of
201 the school, provides a context that can be more or less nurturing (Harris 2010). Studies using the US CivEd data
202 found that adolescents' perceptions of classroom climate were more similar among students at schools with
203 higher percentages of students from high SES backgrounds (Barber et al. 2015a). Furthermore, Reynolds et al.
204 (2014) who reviewed studies of student achievement conclude that it is generally beneficial to be at a school
205 with a high proportion of girls. The absence of social problems at school is also an important ecological asset
206 (Theokas and Lerner 2006), but factors like this have not been the focus in research on school climate.

207 On the other hand, there are teacher-related assets, such as years of experience and skills in teaching, as
208 well as opportunities for students to observe teachers taking on leadership by participating in collaborative
209 school governance (Theokas and Lerner 2006). Again, limited research exists. However, in a cross-sectional
210 study of fifth grade students in the United States Koth et al. (2008) found that students' perceptions of the
211 school being a safe place were more positive the more experienced the teachers were.

212 **Community context.** Many schools are part of a neighborhood, and students' perceptions of the school climate
213 may also be shaped by community contexts. For example, Zaff et al. (2011) report a longitudinal analysis using
214 data from US adolescents from grades eight to eleven, according to which active and engaged citizenship is
215 positively associated with participation in religious activities and youth development programs. A study using
216 data from the ICCS found that students at schools in urban communities are less likely to intend to participate in
217 the future, and the presence of social tensions in the community were negatively associated with students' civic
218 knowledge (Isac et al. 2014). However, Campbell's (2007) analysis of the US CivEd data yielded no significant
219 effect of urbanicity on perceived classroom climate. Research on other community factors that may be
220 associated with students' perceptions of the school climate, such as physical resources in the community (e.g.,
221 libraries, youth facilities) and opportunities for student participation in community organizations, is limited.
222 Whether characteristics of the community are associated with the perceived climate at school deserves further
223 exploration.

224 **Current Study**

225 Using data from four countries with well-developed structures for democratic school participation that
226 participated in the International Civic and Citizenship Education Study (ICCS) 2009, the current analysis
227 addressed some limitations of previous studies. This analysis was guided by two research questions: First, we
228 wanted to know whether there are distinct groups of students characterized by different patterns in their

229 perceptions of school contexts. The focus was on aspects of the school climate and within-school heterogeneity
230 in students' perceptions of the school climate. That is, students may perceive the school climate differently
231 despite them being enrolled in the same school. Distinct patterns of adolescents' perceptions of the school
232 context as supportive for student voice and participation could also be associated in different ways with civic
233 development. Therefore, we further asked whether adolescents' perceptions of the school climate correlate with
234 indicators of emergent participatory citizenship.

235 In particular, we hypothesized that it would be possible to identify multiple groups and at least one group
236 would show signs of alienation. That is, students in such a group would be characterized by negative perceptions
237 of school climate and score low on correlates of school climate. Previous research by Torney-Purta (2009) using
238 data on civic attitudes from an earlier study (CivEd) found a small group of students who were generally
239 alienated from democratic norms. This politically alienated group expressed anger about ethnic minorities and
240 immigrants in their country and were cynical about national government institutions. This analysis did not
241 examine alienation specific to the school context. Similar results were reported by Reichert (2016b) in a more
242 recent analysis of survey data from Australian secondary school students. The current study therefore sought to
243 investigate whether there is a group expressing attitudes of alienation when asked about the contexts of their
244 classrooms and schools.

245 Generally speaking, a person-centered approach is required to examine whether there are definable groups
246 of students with respect to their perceptions of school and classroom contexts. This approach, which identifies
247 clusters or latent classes of students, is better suited to identify patterns of heterogeneity among adolescents than
248 the variable-centered approaches that dominate research on civic development (Reichert 2016a). In addition, the
249 findings of person-centered research tend to be easier to grasp for policy makers, educators and the public than
250 the results of variable-centered analyses of large-scale assessments (Torney-Purta and Barber 2011). This is true
251 in particular when complemented by follow-up analyses that can link response profiles to external variables
252 (Reichert 2016b), such as indicators of emergent participatory citizenship.

253 This analysis first identifies patterns of student responses to questions about the contexts they experience in
254 their schools (whether students have voice in decisions) and in their classrooms (whether an open and respectful
255 classroom climate prevails). Previous analysis has focused on the latter and has not conceptualized these as two
256 distinct but closely related arenas in which students can experience positive participation. Second, the analysis
257 explores which contextual variables – found in the way the school is organized and governed and in
258 characteristics of the local community – are associated with the distinct patterns of students' perceptions of

259 school context for student voice and participation. To put it differently, if there is within-school heterogeneity in
260 students' perceptions, it is helpful to explore which aspects of everyday contexts such as families, schools, and
261 communities are associated with distinct profiles in these perceptions of the school and classroom climate.

262 **Methods**

263 **Data**

264 The International Civic and Citizenship Education Study (ICCS) 2009 database was utilized to investigate
265 whether profiles of attitudes toward participation in classroom and schools could be identified. If such profiles
266 (latent classes) existed, how were they related to contextual variables at the school and community levels? ICCS
267 is an international large-scale assessment of fourteen-year-olds' civic knowledge and understanding,
268 dispositions and attitudes (Schulz et al. 2011). The database also includes contextual variables about students'
269 family background (from student surveys), the school and community context (from surveys of school
270 principals), and about teachers of the sampled schools. ICCS used a stratified two-stage probability sample
271 design, based on schools sampled with probability proportional to size during the first stage, and one intact class
272 of target-grade students and a fixed number of target-grade teachers randomly selected during the second stage
273 (for details on the samples and data collection procedures see Schulz et al. 2011). Table 1 reports the raw sample
274 sizes; however, in subsequent analyses all four countries were weighted equally to balance the unequal sample
275 sizes.

276 <INSERT TABLE 1 HERE>

277 **Student sample.** A total of 14,292 eighth grade students from 664 schools in Denmark, Finland, Norway and
278 Sweden participated in ICCS. Student participation rates were above 91% in all four countries. However, school
279 participation rates were slightly below 90% in Denmark and Norway. Therefore, the (weighted) overall
280 participation rates in the student survey were somewhat lower in Denmark (78%) and Norway (79%) compared
281 to Finland (90%) and Sweden (93%).

282 **Teacher sample.** All four countries met the rigorous sampling criteria set by the International Association for
283 the Evaluation of Educational Achievement (IEA) in relation to the student survey (Schulz et al. 2011), but
284 Denmark and Norway had relatively low overall response rates in the teacher survey. While the participation
285 rates were acceptable at the teacher level, only roughly half of the Danish and Norwegian schools decided to
286 participate in the teacher study. Hence, the (weighted) overall participation rates in the teacher survey were quite
287 low in Denmark (42%) and Norway (35%), whereas these rates were acceptable in Finland (85%) and Sweden
288 (76%). In sum, 5,657 teachers from 516 schools participated in ICCS.

289 **Measures**

290 All students were assessed and surveyed in class, and the assessment was conducted by a trained test
291 administrator (details about data collection procedures in Schulz et al. 2011). Before students completed the
292 international student questionnaire (about 40 minutes), they also participated in an assessment of their civic
293 knowledge and understanding (exactly 45 minutes). Teacher questionnaires were sent to each school for each
294 sampled teacher, and a school questionnaire was sent to the school principal, except for Sweden where the
295 principal and teacher questionnaires were administered online. All measures utilized in the present study are
296 based on the ICCS framework; the school and class climate measures had also been included in previous
297 administrations of the survey (Torney-Purta et al. 2001). The scales utilized were created using item response
298 theory techniques (see Schulz et al. 2011, for a list of items used, scales constructed, and additional references).
299 The use of these scales eases interpretation, as these estimates were scaled in a way that makes it possible to
300 compare them across all countries participating in the administration of the test and survey in 2009. Scales
301 derived from questionnaire items have an international mean of 50 and an international standard deviation of 10
302 across all 38 countries that participated in the ICCS (Schulz et al. 2011). Civic knowledge and understanding
303 was rescaled to that scale for the present analysis. For all scales, higher scores mean “more” of the respective
304 construct.

305 **School climate.** Twelve items measured students’ perceptions of two dimension of school climate. In many of
306 the analyses of the CivEd and ICCS data, this item set has been separated into two scales – “Open Classroom
307 Climate for Discussion” and “Confidence in Participation at School” (e.g., Torney-Purta et al. 2001). Both
308 aspects can be considered indicators of school climate or of democratic experiences at school (see Eckstein and
309 Noack 2014). Two innovations in the current analysis are to use the items from both scales without
310 distinguishing between classroom and school climate and then to identify clusters of students who have
311 definable profiles of experience in the classroom and the school as a whole. The perception of classroom climate
312 as being open for discussion was measured by items one to seven in Table 2, followed by the question: “When
313 discussing political and social issues during regular lessons, how often do the following things happen?”
314 Students could respond on a four-point scale (1 = never, 2 = rarely, 3 = sometimes, 4 = often). Items eight to
315 twelve in Table 2 measured students’ perception of the value of student participation at school following the
316 question: “How much do you agree or disagree with the following statements about student participation at
317 school?” (reverse coded into: 1 = strongly disagree, 2 = disagree, 3 = agree, 4 = strongly agree). Although items
318 and not scales were analyzed here, both climate scales were reliable in all four countries (Cronbach’s $\alpha \geq .74$).

319

<INSERT TABLE 2 HERE>

320 **Distal outcomes.** Six additional scales were used to explicate the meaning of the student profiles. The mean of
321 five measures provided in the international database was used to measure *civic knowledge and understanding*
322 ($\alpha \geq .81$).² Students' internal political efficacy was measured by means of six items (e.g., I am able to
323 understand most political issues easily; $\alpha \geq .87$). Citizenship-related attitudes were measured by five items on
324 students' support for *democratic values*. This scale combines the aspects of freedom of speech and citizenship-
325 related rights (e.g., all people should have their social and political rights respected; $\alpha \geq .68$). Finally, three
326 measures of students' expected participation as adults were used: On the one hand, students' expectations to
327 participate in elections (*future electoral participation*) were measured by three items (e.g., expectation to vote in
328 national elections; $\alpha \geq .79$). On the other hand, protest-related political participation was measured via two
329 scales: The six-item scale *future legal protest* (e.g., collecting signatures for a petition; $\alpha \geq .78$) was used as a
330 measure of widely accepted protest participation in democracies, whereas *future illegal protest*, as anticipated
331 by the adolescents, was also included (3 items, e.g., occupying public buildings; $\alpha \geq .86$).

332 **Student- and family-level correlates.**³ At the student level, sociodemographic information that reflects
333 individual or family-based assets shaping the developmental niche for emergent participatory citizenship is used
334 in correlational analyses: students' *gender* (0 = boy, 1 = girl) and family SES, measured via the common proxy
335 *home literacy* (six-point scale from 0 = 0-10 books to 5 = more than 500 books; see Persson 2015, for a
336 justification of this measure). *Discussions* of political and social issues with parents and/or peers *outside of*
337 *school* was measured by four items (e.g., talking with parent(s) about political and social issues) as another
338 aspect of the developmental niche ($\alpha \geq .79$).

339 **School-level predictors.** At the school-level, the *percentage of girls* in the school sample was used, and the
340 *school SES* was measured as the average of students' home literacy background. These aggregate measures
341 reflect important aspects of the school. Further, ease of access to educational resources was measured as the
342 ratio of students per teacher at school (*student-teacher ratio*). Safety of the school environment was measured as
343 *social problems at school*, indicating the prevalence of disruptive behaviors of students at school (e.g.,
344 frequency of vandalism, bullying etc.), as reported by the principal (9 items, $\alpha \geq .71$).

345 **Community-level predictors.** All community-level measures of ecological assets were measured via the
346 principal questionnaire. The *size of the community* (five-point scale, from 0 to 4: village, small town, town, city,

² Following the tradition of other large-scale assessments of the IEA, the items that assessed students' civic knowledge have not been made available to those conducting secondary analysis.

³ Although information about students' immigration status was collected (see first note), these data were reserved for future analysis.

347 large city) was used as an indicator of urbanicity. The available *resources in the community* are ecological assets
348 and were measured by six items (e.g., public library, museum or art gallery; $\alpha \geq .72$). Furthermore, *opportunities*
349 *for student participation* in the local community are institutional resources and were measured by means of
350 seven items (e.g., human rights projects, cultural activities; $\alpha \geq .66$). Finally, 12 items measured potential *social*
351 *tension in the community* (e.g., youth gangs; $\alpha \geq .83$). This is another measure of safety of the physical
352 environment located at the community-level.

353 **Teacher-level predictors.** Teachers and the nature of their teaching play a vital role in students' opportunities
354 for open discussions and meaningful participation at school. The specific sampling strategy employed in ICCS
355 results in teachers of all subjects being sampled and in teachers' responses being aggregated to the school level.
356 Three variables were used as indicators: The indicator of gender balance was the *percentage of female teachers*.
357 In addition, *teachers' experience* in teaching students was measured in years (averaged); their self-reported
358 ability to apply a range of teaching methods (*confidence in teaching methods*) was also examined. The
359 confidence in teaching methods scale contained eight items (e.g., group work, lecturing; $\alpha \geq .65$). Finally, the
360 school is a place where teachers can serve as role models for students by demonstrating collaborative
361 *participation in school governance*. Seven items measured this ecological asset (e.g., teachers actively take part
362 in school development activities; $\alpha \geq .80$).

363 **Data Analysis**

364 The research questions were addressed in several steps. First, two-level latent class analysis (LCA) was
365 performed in Latent Gold 5.1 (Vermunt and Magidson 2016) to identify distinct groups of students, where
366 students within groups would be more homogenous in relation to their perceptions of school climate than
367 students between groups. The two-level analyses accounted for the data structure with students being nested in
368 schools; missing responses were handled in the Likelihood function while conducting the LCA (Vermunt and
369 Magidson 2016). Relative fit measures were utilized and triangulated against classification reliability to decide
370 on the number of groups (latent classes) that would be most suitable to describe the student sample in terms of
371 their perceptions of school context. The identified latent classes were then inspected with respect to a range of
372 potential student-level correlates (distal outcomes) to better understand the groups and to validate their
373 distinctiveness.

374 Finally, two-level fixed effects multinomial regression analyses were performed to predict group
375 membership using contextual variables. On the one hand, school, community and teaching contexts are distinct
376 conceptually and with respect to the types of measures and the participation rates. On the other hand, the

377 number of schools is limited, and the higher-level model might be inflated by considering all contexts in one
378 analysis. Therefore, separate models were estimated to examine: (1) characteristics of the student and home
379 background, which shape the developmental niche above and beyond other contextual influences; (2) school-
380 related characteristics; (3) community context; and (4) the aggregated teacher variables. The analyses described
381 in points (2) through (4) were performed controlling for student characteristics. Because missing data in the
382 predictor variables could not be properly handled as part of these analyses, a two-level multiple imputation
383 (“EM imputation”) was performed. Furthermore, predictors that were scaled by means of item response theory
384 were grand mean-centered in these analyses.

385 **Results**

386 **Distinct Groups**

387 In a first step, LCA of students’ perceptions of the classroom climate and overall school climate items (see
388 Table 2) were performed separately for each country. The fit indices indicated that five latent classes would be
389 most suitable to describe the data in each country (based on the relatively smallest information criteria; Collins
390 and Lanza 2010). In a next step, LCA of the pooled data from all four countries were performed. In Table 3, we
391 see that several fit indices favored a solution with four or five latent classes, as some did not decline
392 substantially (Collins and Lanza 2010).⁴ Additional tests were conducted to examine whether the identified
393 groups have the same response profiles in each country. All slopes were found to be invariant across the four
394 countries. However, two items were identified to have non-invariant thresholds using item-level invariance tests
395 (Kankaraš, Miloš, Moors, Guy and Vermunt 2011).⁵ In addition, models with different group sizes across
396 countries performed better than models assuming that group sizes would be identical in all four countries (see
397 Table 4). Therefore, the latent class model with two direct effects and unequal group sizes was selected as most
398 appropriate to describe the data.

399 <INSERT TABLE 3 HERE>

400 The following section presents the profiles of students’ perceptions of the school climate and how these
401 profiles are associated with civic knowledge, attitudes, and expected adult participation. This characterization
402 helps us to better understand the differences and similarities among the identified groups. Given that a group of
403 alienated students identified according to their more general social attitudes had been found in earlier analysis,

⁴ Had we chosen six latent classes, one of these five latent classes would have split into two latent classes (one of them of extremely small size). Furthermore, the fit indices of separate LCA on each aspect of the school climate supported three- to six-class models. Their triangulation suggested five latent classes as the optimal solution, which reflects the student profiles very well. More complex latent class models performed worse than the models reported here.

⁵ “Teachers present several sides of the issues [...]” and “All schools should have a <school parliament>.”

404 in this analysis we wanted to examine whether there is a group of students alienated from participation in their
405 schools. Subsequently, associations between contextual variables and student profiles are presented to
406 understand which ecological assets are meaningful predictors of group membership.

407 <INSERT TABLE 4 HERE>

408 **Latent Class Profiles based on Classroom and School Climates**

409 Figure 1 shows the mean scores for each item and group, whereas Figure 2 provides a more nuanced image of
410 the distinct differences. In addition, student-level distal outcomes were used to provide more detailed
411 descriptions of these groups and to help label each of them (see Figure 3 and Table 5). Table 6 summarizes the
412 group sizes per country and overall.

413 <INSERT FIGURE 1 HERE>

414 <INSERT FIGURE 2 HERE>

415 **Activist.** Starting with the group that reports the most positive school climate, the first group of students was
416 labeled *Assured activists*, as they consistently reported perceiving their school context as very open and
417 supportive for student voice and participation (see Figures 1 and 2). *Activists* are also likely to score high on
418 most indicators of emergent participatory citizenship (see Figure 3): This group on average has the highest
419 levels of civic knowledge and understanding, as well as the highest levels of political efficacy, and the most
420 positive attitudes towards democracy. While this group also shows the highest expectations to participate in a
421 range of political activities in the future, their intentions to participate in illegal protest activities is significantly
422 lower than in most other groups. In total, roughly 16% of all students were in this group, though Finnish and
423 Swedish students were somewhat underrepresented among *Activists* (compared to Danish and Norwegian
424 students).

425 <INSERT FIGURE 3 HERE>

426 <INSERT TABLE 5 HERE>

427 **Debater.** The second and third group had contrasting response patterns. *Constructive debaters* commonly use
428 the two highest response categories, and for the first three items on classroom climate, they primarily respond
429 that this is “often” the case. Although members in this group tend to perceive the classroom as very open for
430 discussion, their perception of the value of student participation in the school as a whole tends to be lower than
431 for *Activists* and the *Communitarians*. Although about one quarter of the students was in this group, almost half
432 of all Danish students were *Debaters*. What makes members of this group distinct from *Communitarians* (the

433 next group to be discussed) is their tendency to engage somewhat more frequently in civic discussions outside
434 school (one tailed $p < .01$), which explains the label. They also had relatively low support for democratic values.
435 **Communitarian.** *Confident communitarians* were given this name due to their high probability to strongly
436 agree with indicators of the value of student participation at the school level. In fact, members of this group and
437 *Activists* never disagreed or strongly disagreed that their participation at school is meaningful. However, these
438 students on average had the second to lowest perceptions of their classroom being open for discussion, and they
439 were in between the *Indifferent* and *Activist* groups in terms of indicators of emergent participatory citizenship.
440 What makes them different from the *Debaters* is their significantly stronger support for democratic values, as
441 well as their less frequent involvement in discussions about social and political issues with peers and parents
442 outside school. *Communitarians* represent the next to smallest group overall and are especially rare in Denmark
443 (see Table 6).

444 <INSERT TABLE 6 HERE>

445 **Indifferent.** The majority of students labeled the *Indifferent* group, reported moderate perceptions of their
446 school context as open and supportive for student voice and participation. Students in this group more frequently
447 used the second highest response category throughout when indicating their perceptions of school climate.
448 Although they were basically in the middle between the previously described groups and the last group that is
449 described below, they were below average on most indicators of emergent participatory citizenship and had
450 attitudes to democracy that were as negative as *Alienated* students. Finally, it is noteworthy that this group
451 comprised less than a third of all students in Denmark, whereas more than half of all Finnish students were
452 categorized as *Indifferent*.

453 **Alienated.** Despite the comparatively negative perception of classroom context among members of the last
454 group, their average perceptions of the value of student participation at school are quite moderate. At the same
455 time, members of this group have a higher likelihood of using the most extreme, negative response category
456 than members of the other groups (see Figure 2). This negative view on school context is associated with the
457 most negative results on other indicators of emergent participatory citizenship: On average, students in this
458 group are least knowledgeable in the civic domain, are least efficacious and have the most negative attitudes
459 towards democracy. Although they are least likely to expect to participate in legal forms of political action in the
460 future, they report the highest levels of expected illegal protest behavior. *Alienated* students form the smallest
461 group in Denmark, Finland and Norway (less than 8%), but in Sweden they are more common than
462 *Communitarians*.

463 **Prediction of Group Membership**

464 Finally, we examined the associations between contextual variables and the student profiles to learn which
465 characteristics of adolescents' contexts are nurturing for emergent participatory citizenship, and which contexts
466 appear conducive to alienation. The largest group of students, the *Indifferent* group, was used as a reference
467 group in the analyses that are presented below.

468 **Group membership and home context.** The student-level analysis (no table) as well as the multilevel analyses
469 displayed in the following tables suggest that girls are more likely than boys to be *Debaters* or *Activists*. The
470 odds of being in the *Alienated* group compared to membership in the *Indifferent* group are significantly higher
471 for boys than for girls. Socioeconomic background, measured via home literacy resources, is negatively
472 associated with being in the *Indifferent* group, that is, higher socioeconomic background goes with better
473 chances of being an *Activist*, a *Debater*, or a *Communitarian*. Finally, the more students discuss social or
474 political issues outside school, the larger their odds of being in the groups of *Activists* or *Debaters*, and the less
475 likely students are to be in the *Alienated* group.

476 **Group membership and school context.** The results in Table 7 show no significant effect for the student
477 gender ratio. However, the odds of being in the *Alienated* group are higher the higher the average
478 socioeconomic status. Furthermore, the principals' report of fewer social problems at the school is positively
479 associated with membership in the *Debater* and *Activist* groups.⁶

480 <INSERT TABLE 7 HERE>

481 **Group membership and community context.** The results in Table 8 suggest that community context *per se*
482 matters less than school context. Variations in community context are primarily associated with membership in
483 the *Communitarian* group. Specifically, smaller, more rural communities, and more opportunities for student
484 participation in the local community are associated with higher odds of being a *Communitarian* rather than an
485 *Indifferent* student. On the other hand, opportunities for student participation in the local community are
486 negatively associated with being a *Debater* (in the classroom setting). In addition, social tension in the
487 community predicts higher levels of membership in the *Alienated* group.

488 <INSERT TABLE 8 HERE>

489 **Latent class membership and teaching context.** Finally, Table 9 shows the effects of teacher variables
490 (aggregated at the school level due to the ICCS sampling design) on group membership. The results indicate that

⁶ All results were compared to analyses in which cases with missing data were eliminated, yielding only one significant difference: Had cases been eliminated from the analyses, we would have identified a significant negative effect of the student-teacher ratio on being in the *Alienated* group ($p < .05$).

491 being in schools with a large proportion of male teachers is associated with higher odds of their students being
492 *Activists* or *Debaters*. More importantly, teacher role models seem to matter for the development of emergent
493 participatory citizenship: The more teachers at school are involved in school governance, the higher the odds
494 that students will be in one of the three more advantaged groups in terms of emergent participatory citizenship.
495 Specifically, a one-point increase in teacher participation in school governance goes hand in hand with 3%
496 higher odds of students being an *Activist*, a *Debater*, or a *Communitarian* instead of an *Indifferent* student.
497 Students at schools where teachers on average are more confident in using a range of teaching methods have
498 higher odds of being in the *Alienated* group and lower odds of being *Communitarians*. Further analysis of
499 teacher data will be necessary to clarify this, remembering that teachers respond to curriculum requirements as
500 well as to perceptions of what will work with their students in developing and using various instructional modes.

501 <INSERT TABLE 9 HERE>

502 **Discussion**

503 This analysis examined ninth graders' perceptions of school context as open and supportive of student voice and
504 participation using large-scale nationally representative cross-sectional data from four Nordic countries. Many
505 studies have shown that positive school climates that encourage students to share their opinions and to
506 contribute to decisions about the school are important for the civic development of adolescents (Knowles et al.
507 in press; Mager and Nowak 2012), but the distinct features and the contextual predictors of how students
508 perceive the school climate remain unclear. The current analysis is the first to show how adolescents differ in
509 their perceptions of the school and classroom climates considered together, and that multiple ecological assets
510 shape how young people perceive the climate at their school. Thus, the contexts that surround young people may
511 contribute to their civic development through multiple and inter-related aspects of the developmental niche
512 (Torney-Purta and Amadeo 2011).

513 Based on a latent class analysis, and in line with the expectation that there is within-school heterogeneity in
514 adolescents' perceptions of school climate contexts, five distinct groups of students with distinct profiles in their
515 perceptions of school context were identified. Subsequent analyses showed that group membership was
516 associated with different levels of civic knowledge, efficacy, and support for democratic values. Furthermore,
517 group membership was also predictive of students' expected participation in political activities in the future.
518 One group expressed negativity about their classes and schools, was unwilling to become engaged and was
519 labeled *Alienated*. The other groups were labeled *Indifferent*, *Activist*, *Debater*, and *Communitarian*, based on
520 students' perceptions of school context. These groups were also characterized by different levels of emergent

521 participatory citizenship. In short, students' perceptions of their contexts at school appear helpful in
522 understanding civic development. Schools and communities should consider encouraging adolescents to share
523 their views and to contribute more fully to decision-making in their schools as Flanagan et al. (2007) and
524 Knowles et al (in press) also argue.

525 In addition, ecological assets at the individual, family, school and community levels were significant
526 predictors of the profiles summarizing perceptions of class and school climate. These results suggest that
527 ecological assets are associated with the civic development of adolescents and that the contexts that surround
528 adolescents form niches that can support or hinder the development of emergent participatory citizenship
529 (Torney-Purta and Amadeo 2011). More precisely, compared to *Indifferent* students, *Alienated* students on
530 average were less frequently engaged in civic discussions outside of school. Members of all the other three
531 groups reported more frequent such discussions than did *Indifferent* students. Furthermore, *Debaters* and
532 *Activists* were more commonly found at schools where principals reported relatively few social problems like
533 bullying. Aspects of the community context such as urbanicity and opportunities for student participation were
534 predictive of being a *Communitarian*; and membership in one of these three groups was more likely if teachers
535 collaboratively engaged in school governance activities. Therefore, both adolescents' distinct perceptions of
536 student voice and influence at school as well as contextual predictors can help identify adolescents who may be
537 at risk of being alienated at school (and potentially in broader settings, which could be examined in future
538 research). These insights may be useful to promote aspects of a productive school climate that can further a
539 positive civic development at a time when young people are susceptible to a variety of potentially negative
540 external influences (Eckstein and Noack 2014).

541 **Developmental Niches**

542 In the ecological assets framework, relatively proximal ecological settings are considered in relation to the civic
543 development of young people. These include social networks and access to family, school and community
544 resources (Lerner et al. 2014). These everyday settings are predictors of students' civic development, and are
545 part of the developmental niches model. More precisely, Torney-Purta and Amadeo (2011) identified three
546 dimensions of developmental niches: settings where adolescents have face-to-face contact with others that are
547 directly relevant to adolescents' development (family, school, peers, community organizations), societal
548 customs, and characteristics and beliefs of those who care for or teach adolescents. The present analysis
549 addressed these dimensions by examining the associations between students' perceptions of the setting of school
550 context and characteristics of their homes, schools, and communities, as well as teaching-related factors. These

551 are daily life settings that matter. Examining both classroom- and school-level opportunities for students to
552 express themselves should be more central to future research on civic development.

553 The idea behind the endpoint of “emergent participatory citizenship” to which these developmental niches
554 contribute is a complex one. It is not that there is a simple relation between living in a home with activist parents
555 or attending a school where students cooperate for the common good and outcomes often associated with
556 participatory citizenship. These niches are multidimensional and often interactive, and they require a multilevel
557 perspective on the civic development of young people that extends beyond formal education processes (see also
558 Amnå 2012; Eckstein and Noack 2016; Lerner et al. 2014). Male and female students may have different
559 experiences, as may be the case for students whose families live below the poverty line (to give just two
560 examples). However, identifying the dimensions that are important, as this analysis does, can provide useful
561 guidance to those who wish to enhance the process of developing emergent participatory citizenship.

562 **Student characteristics and family background.** Previous studies have shown that boys are at greater risk for
563 showing signs of alienation in their general social attitudes (Reichert 2016b; Reichert 2017; Torney-Purta 2009;
564 Torney-Purta and Barber 2011). Similarly, this study found that boys and girls have different likelihoods of
565 being in the *Alienated* group with respect to perceptions of schooling. Even in Nordic schools that provide
566 relatively well-developed structures for democratic school participation (Blossing et al. 2014), boys are less
567 likely to be interested in debate or to believe that their participation at school is valued. At the same time,
568 additional analyses found that boys are less likely to expect to participate in future civic activities, but more
569 likely than girls to report expected participation in illegal protest activities. Future research needs to address the
570 ways in which male and female students differ in how the aspects of the developmental niche at school can
571 positively influence participatory citizenship. For instance, Eckstein and Noack (2014) found stronger sense of
572 community among girls than boys, and that students’ sense of community at school was a positive predictor of
573 other aspects of school climate. Building community at school appears to be an important aspect of a nurturing
574 developmental niche (Jagers et al. 2017). Future studies are required to clarify the gender differences in
575 perceiving school climate. Other factors might be considered such as the role of peer interaction outside school
576 in reinforcing alienation among boys (Barber et al. 2015b; Ellis et al. 2018).

577 Home resources also play a role in predicting membership in the identified groups, a finding that is neither
578 novel nor surprising. Especially important is the effect of discussions with peers and parents, however. If
579 students have opportunities to engage in discussions about social or political issues outside of school, they are
580 likely to perceive their school as more valuing and are at less risk of being alienated. Discussions with parents

581 often reflect beliefs that their offspring need to learn about and be able to discuss social and political issues.
582 These experiences could equip adolescents to participate constructively when teachers encourage students to
583 express themselves.

584 **School context.** Schools serve as an important niche for the civic development of adolescents and can provide
585 an environment that reduces alienation. Unsurprising is the finding that the existence of social problems at
586 school (e.g., bullying or vandalism) is associated with lower probabilities of being an *Activist* or a *Debater*. The
587 fewer social problems students encounter at school, the more open and positive will they perceive the school
588 context for sharing opinions and contributing to the school. Students who feel safe at school are more likely to
589 sense that their perspectives and contributions are valued, and disruptive behaviors of other students at school
590 has the potential to hamper emergent participatory citizenship and achievement (Ferrín Pereira et al. 2015; Koth
591 et al. 2008). Hence, schools should continue to place priority on reducing social tensions that present negative
592 contexts for emergent participatory citizenship.

593 **Community context.** The results suggest that community context *per se* matters less than school context in the
594 prediction of membership in the identified groups of students. Furthermore, aspects of the community were
595 primarily associated with membership in the *Communitarian* group, which supports the validity of the chosen
596 label. Smaller communities and communities that provide spaces for participation of adolescents are more likely
597 to be those in which *Communitarians* emerge at school. The provision of opportunities for student participation
598 is an important characteristic of the local community that helps to develop citizens that are neither *Indifferent*
599 nor *Alienated*.

600 **Teaching context.** Adults' expectations and beliefs about education and civic communities have the potential to
601 influence the interactions that take place within the developmental niche where the individual is embedded
602 (Torney-Purta and Amadeo 2011). An important message here is that teachers can serve as models for students.
603 Teachers who are able to take action in school governance can shape developmental niches and become role
604 models for positive development of emergent participatory citizenship. Although Nordic curricula and education
605 policies emphasize the value of democratic participation (Ofstedal Telhaug et al. 2006), the significance of
606 teachers' participation in school governance for motivating students' democratic participation at school could be
607 further emphasized. Blossing et al. (2014) note that the ideal of participation at Nordic schools may not be fully
608 realized at the local level. By way of example, focus group interviews showed that Swedish adolescents do not
609 recognize their schools as places where democracy is practiced (Arensmeier 2010). Schools could intensify their

610 efforts to show that the opinions and contributions of teachers and students matter above and beyond those of
611 school administrators.

612 Amnå and Ekman (2014) discuss the concept of “standby citizens” who are able to and will participate if
613 motivated by worrisome political events. Therefore, adolescents need to be able to identify social and political
614 problems in order to participate in times of need. Developing this ability could be enhanced by small group
615 discussions and reciprocal cooperation in class through which students are encouraged to listen to others and
616 take their perspectives (Arensmeier 2015). However, teachers need to be prepared to scaffold such discussions
617 and to interact with students in ways that encourage them to contribute to their schools.

618 On the other hand, the measures of teaching confidence in this dataset did not relate in expected ways to
619 membership in one of the five groups. One explanation could be that teachers whose classes have many
620 alienated or otherwise difficult students may try to develop the ability to use a wide range of teaching methods
621 to engage them (but will not always succeed). Also remember that the teachers sampled were from a range of
622 subject matters (some of which are less appropriate than others for using the methods listed in the teacher
623 survey).

624 Bayram Özdemir et al. (2016) examined adolescents’ civic engagement at school in relation to students’
625 perceptions of teachers’ behaviors. Their results revealed that only engaged and inspiring teaching styles
626 fostered adolescents’ initiations of civic and political discussions in class. Consequently, the way that civic and
627 political issues are presented for discussion in classrooms may matter more than teachers’ confidence in using
628 particular methods. Observational studies are needed to extend the results from the self-reported measures here.

629 **Societal context.** Although the countries in this sample were comparatively homogenous in relation to their
630 cultural and historic traditions, certain profiles were more common in some countries than in others. It appears
631 that students in Denmark are especially likely to live in supportive developmental niches: Only one third of
632 students in this country were in the *Indifferent* or *Alienated* groups, whereas it was nearly half of the students in
633 each of the other three countries. Though the *Indifferent* group was the largest in the other three countries,
634 Danish students were especially likely to be in the group of *Debaters*. Hahn (1998, 2015), who has studied
635 Danish civic education over several decades, raises several possibilities, especially that Denmark is a nation
636 where discussion is valued and widespread (although the term “debater” assigned in this study may indicate
637 somewhat more contention than is common). Sweden – the country with the largest number of students who
638 experience alienation from their schools (compared to Denmark, Finland and Norway) – has taken the market-
639 oriented school system further than other Nordic countries and has implemented a national school inspection

640 system (Blossing et al. 2014). Again, we can only speculate whether these facts may be causally related to these
641 country differences. However, it is noteworthy that the ethos of Swedish school inspections has changed over
642 the previous decades (Gustafsson et al. 2014). Furthermore, Ekholm and Lindvall (2012) examined the potential
643 effects of school inspections on value-adjusted marks in Swedish schools with ninth-grade students. These
644 authors found that in 46% of the schools that were inspected in 2003 or 2004, the marks declined in the
645 following years, with improvements only in 29% of all schools. Therefore, future research may also need to
646 consider the interaction between the implementation of school inspection and movement toward a market-
647 oriented school system.

648 **Limitations and Future Research**

649 Finally, a few limitations of the present study need to be noted, which also provide avenues for future research.
650 First, the ICCS provides cross-sectional data, hence this research was correlational in nature. Yet it is plausible
651 that contextual variables at the school, community and teaching levels precede students' perceptions of school
652 context (or have a stronger effect on students' perceptions than vice versa). Although large-scale longitudinal
653 data collections are challenging at an international level, future waves of quantitative large-scale studies should
654 make the collection of longitudinal data a priority in order to provide more possibilities for causal analyses in
655 comparative perspective. Using person-centered analysis, longitudinal data would also enable researchers to
656 examine whether, at which age, and perhaps even why transitions in views of school climate take place. Another
657 question is how the effects of developmentally relevant assets may change over time. The combination of
658 longitudinal data and a person-centered approach to its analysis would enable developmental psychologists and
659 school educators to establish nurturing developmental niches for youth at different stages during adolescence.

660 Second, this study had a regional focus on highly developed countries with stable democratic traditions.
661 Future studies should apply person-centered analyses to data from other regions. The ICCS 2009 database
662 provides opportunities in many other countries to extend the present analysis, and another wave (ICCS 2016)
663 will soon be available for analysis.

664 Third, the Danish and Norwegian teacher samples were quite small. Therefore, caution needs to be
665 exercised when drawing conclusions from the teacher analysis. Yet it is also noteworthy that the effect of
666 teachers as role models makes sense. Future research might examine how schooling can be conceived as part of
667 a developmental niche, and analyze the role of concurrent teacher practices across classrooms at school (Jagers
668 et al. 2017). Furthermore, we need a better conceptualization of how peers contribute to these niches. Research
669 has shown that spending time with peers in unstructured contexts out of school is associated with lower levels of

670 civic knowledge and relatively poor attitudes toward women's rights (Barber et al. 2015b), and is also
671 associated with a higher propensity of political alienation (Torney-Purta and Barber 2011).

672 Fourth, the measurement of community context was constrained as it relied on reports by the school
673 principals. It would be better if survey data could be linked with official data and perhaps location. However,
674 this raises issues of data privacy, and the way these data were collected certainly balances costs and benefits
675 quite well.

676 Last, the effects of contextual variables may seem relatively small. It is possible that aspects not measured
677 in the current study are important contextual predictors of the student profiles. However, it is also necessary to
678 note that the scales of the contextual variables differed from those of the student level predictors. For example,
679 being a girl instead of a boy is qualitatively different from a 1% change in the relative number of girls at a
680 school.

681 **Conclusion**

682 Several important conclusions emerge from this study. First, the analysis showed that students' perceptions of
683 whole school contexts and of classroom contexts both contribute to their overall view of their schools as open
684 and supportive for student voice and participation (or alternatively, not open or supportive). Second, these views
685 are intertwined with school and community contexts as reported by teachers and school administrators. Multiple
686 contexts shape the developmental niches of adolescents, as Torney-Purta and Amadeo (2011) proposed.
687 Students' perceptions are not merely a result of individual characteristics or specific classroom experiences.
688 Instead ecological assets in each of these contexts contribute to adolescents' overall perceptions of their school's
689 climate. Characteristics of both the classroom and the school as a whole contribute to this process.

690 These perceptions of the classroom and school are associated with indicators of emergent participatory
691 citizenship. By enhancing the niches in which emergent participatory citizenship develops, students may also
692 perceive more opportunities to shape their environments, which may further support positive youth
693 development. Raising teachers' and community leaders' awareness of the associations between contextual
694 assets, students' perceptions of the school climate, and factors associated with alienation from school are
695 important. Setting ground rules, preparing teachers to scaffold discussions, and more generally building schools
696 in which adolescents can experience a sense of community and practice democratic participation is a promising
697 direction.

698 In addition, the present analysis found differences even among a relatively homogenous set of highly
699 developed countries with long democratic traditions. This aligns with the developmental niches model, which

700 argues that besides historically rooted customs and cultural beliefs, political and social institutions also shape
701 the developmental niches and, hence, emergent participatory citizenship (Torney-Purta and Amadeo 2011).
702 Comparative studies on the development of adolescents are fruitful sources to identify directions for promoting
703 positive youth development. If the aim of civic and citizenship education and related programs is to foster the
704 development of emergent participatory citizenship among adolescents, then adults who surround adolescents
705 need to consider ways to enhance the *various contexts* that constitute adolescents' developmental niches. The
706 present study has shown that multiple contexts may need enhancement in order to support adolescents' civic
707 development and has shown the relevance of ecological assets in that endeavor.

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Authors' Contributions

FR conceived of the analysis and its design, performed the statistical analysis, and drafted the manuscript. JC participated in the design of the analysis and in the interpretation of the data and helped to draft the manuscript. JTP participated in the interpretation of the data and helped to draft the manuscript. All authors read and approved the final manuscript.

Data Sharing Declaration

The data analyzed here are available from the IEA Study Data Repository (<http://rms.iea-dpc.org/>).

Conflicts of Interest

The authors report no conflict of interests.

Compliance with Ethical Standards

The data used in this study were collected by the International Association for the Evaluation of Educational Achievement (IEA) and all data collection procedures conformed with the rigorous methodological and ethical standards of the IEA, including informed consent, confidentiality and anonymity, and voluntary participation.

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Ethical Approval

All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards. This article does not contain any studies with animals.

Informed Consent

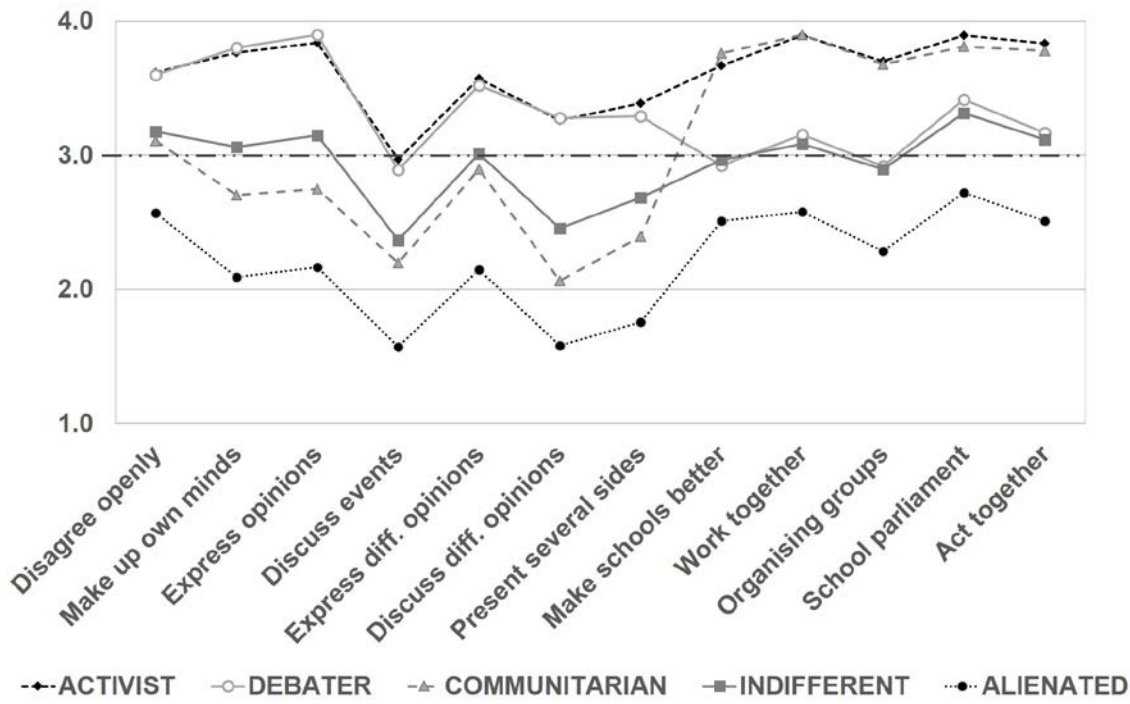
Informed consent was provided by the study participants (and their parents in the case of student data).

Figure 1. Mean scores of the indicators of the five latent classes. *Note:* Data sourced from ICCS 2009.

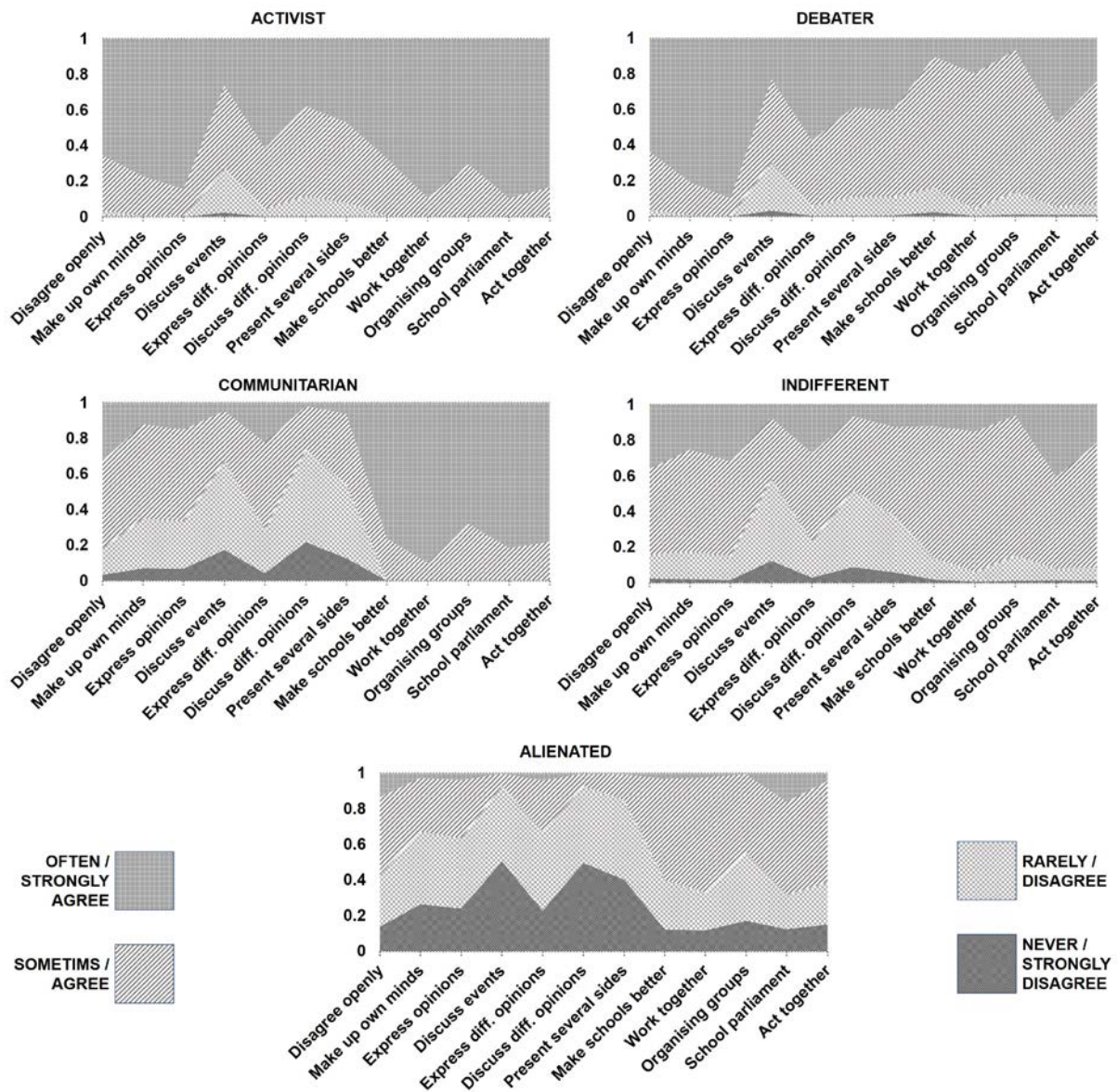
Figure 2. Response probabilities per category of each indicator for each of the five latent classes. *Note:* Data sourced from ICCS 2009.

Figure 3. Mean scores of student outcomes by latent classes. Higher scores mean “more” of the respective construct (ns = mean difference between respective groups is non-significant, $p > .05$). *Note:* Data sourced from ICCS 2009.

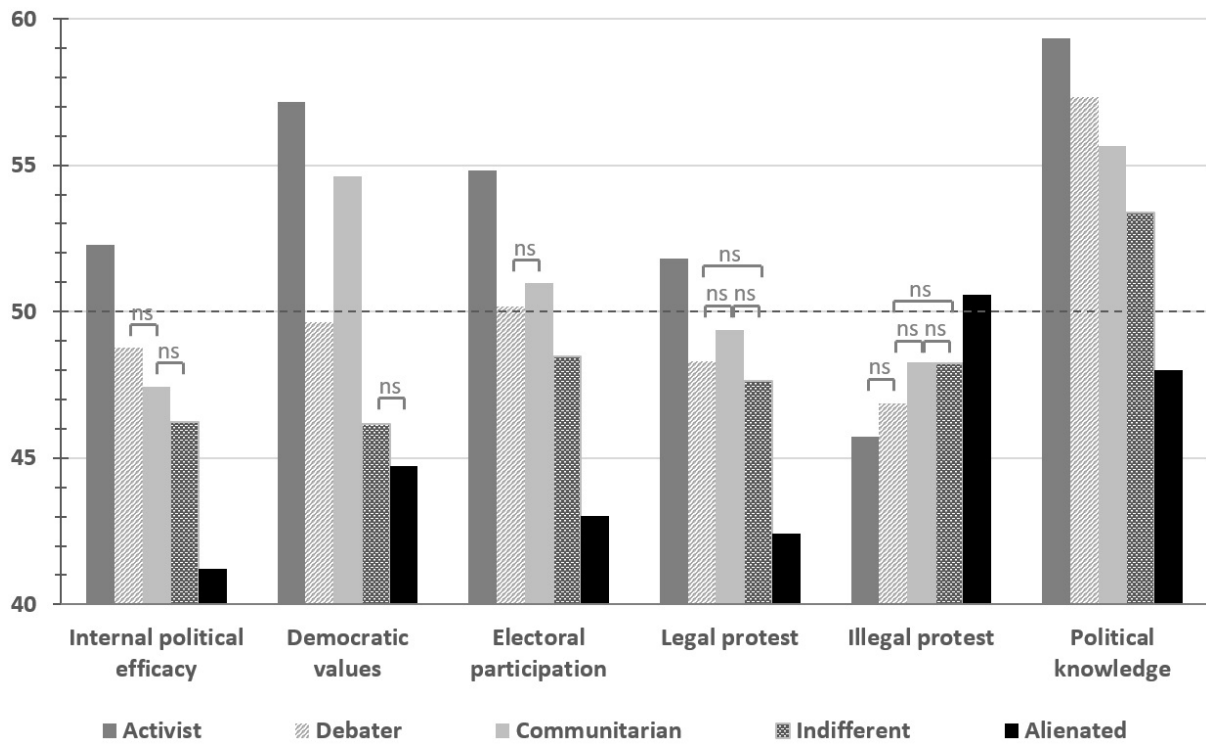
1 Figure 1



1 Figure 2



1 Figure 3



1 Table 1

2 *Unweighted Sample Sizes*

Country	Student Survey		Teacher Survey		Principal Survey
	Schools	Students	Schools	Teachers	
Denmark	193	4,508	113	928	171
Finland	176	3,307	174	2,295	174
Norway	129	3,013	73	492	118
Sweden	166	3,464	156	1,942	155
Total	664	14,292	516	5,657	618

3 *Note.* Data sourced from ICCS 2009.

1 Table 2

2 *Means and Standard Deviations of All Measures*

Variable	<i>M</i>	<i>SD</i>
Indicators of school climate		
Students are able to disagree openly with their teachers	3.30	0.76
Teachers encourage students to make up their own minds	3.25	0.81
Teachers encourage students to express their opinions	3.33	0.80
Students bring up current political events for discussion in class	2.52	0.87
Students express opinions in class even when their opinions are different from most of the other students	3.15	0.81
Teachers encourage students to discuss the issues with people having different opinions	2.68	0.89
Teachers present several sides of the issues when explaining them in class	2.85	0.86
Student participation in how schools are run can make schools better	3.12	0.67
Lots of positive changes can happen in schools when students work together	3.28	0.61
Organising groups of students to express their opinions could help solve problems in schools	3.07	0.65
All schools should have a <school parliament>	3.44	0.67
Students can have more influence on what happens in schools if they act together rather than alone	3.27	0.66
Distal outcomes		
Political knowledge and understanding	55.11	9.40
Internal political efficacy	47.51	10.88
Democratic values	50.02	10.22
Future electoral participation	49.75	9.56
Future legal protest	48.17	9.52
Future illegal protest	47.72	9.41

4 Table 2 continued

Variable	<i>M</i>	<i>SD</i>
Student and home context		
Female student	0.51	0.50
Home literacy	2.61	1.31
Discussion outside school	47.73	10.36
School context		
Percentage of girls	51.54	11.36
School SES	2.61	0.53
Student-teacher ratio	10.10	3.15
Social problems at school	53.99	8.54
Community context		
Size of community	1.37	1.15
Resources in community	53.42	8.64
Opportunities for student participation	48.45	10.47
Social tension in community	47.35	9.13
Teaching context (school averages)		
Confidence in teaching methods	49.32	5.01
Participation in school governance	49.20	4.73
Teacher experience (in years)	14.45	5.00
Percent female teachers	63.06	16.39

5 *Note.* Data sourced from ICCS 2009.

1 Table 3

2 *Comparison of Fit Indices of Different Latent Class Models Using the Pooled Sample*

Latent class model	LL	BIC	AIC	AIC3	CAIC	SABIC	Error
One-class model	-24596	50286	49479	49623	50430	49828	0.00
Two-class model	-23354	48198	47100	47296	48394	47576	0.08
Three-class model	-22789	47463	46074	46322	47711	46675	0.11
Four-class model	-22427	47133	45453	45753	47433	46180	0.12
Five-class model	-22206	47088	45116	45468	47440	45970	0.15
Six-class model	-22082	47235	44973	45377	47639	45952	0.16
Seven-class model	-21993	47452	44898	45354	47908	46003	0.17
Eight-class model	-21921	47704	44858	45366	48212	46090	0.20
Nine-class model	-21875	48007	44871	45431	48567	46228	0.21

3 *Note.* LL = Log-Likelihood; BIC = Bayesian Information Criterion; AIC = Akaike Information Criterion; AIC3
 4 = AIC with 3 as penalizing factor; CAIC = Consistent AIC; SABIC = Sample-size Adjusted BIC; Error =
 5 classification error. Numbers in bold indicate candidate models given the respective fit index. Data sourced from
 6 ICCS 2009.

1 Table 4

2 *Comparison of Model Fit in Relation to Measurement Invariance across Four Countries*

Model	LL	BIC	<i>cmP</i>	Error
H0: Heterogeneous	-22206	47088	0.00	0.15
H1: Partial invariance (equal slopes)	-22257	46094	0.00	0.15
H2: Structural invariance (H1 with equal thresholds)	-22517	45795	0.00	0.15
H3: H2 with two direct effects	-22413	45723	1.00	0.15
H4: H3 with equal class sizes	-22475	45755	0.00	0.15

3 *Note.* LL = Log-Likelihood; BIC = Bayesian Information Criterion; *cmP* = approximate correct model

4 probability; Error = classification error. Model in bold selected for further examination (see text for details).

5 Data sourced from ICCS 2009.

1 Table 5

2 *Predicting Distal Outcomes from Group Membership (Reference Group: Indifferent Students)*

	Civic knowledge	Internal political efficacy	Democratic values	Electoral participation	Legal protest	Illegal protest
Activist	5.96 ^{***} (0.75)	6.05 ^{***} (0.88)	10.85 ^{***} (0.79)	6.35 ^{***} (0.78)	4.18 ^{***} (0.78)	-2.52 ^{***} (0.80)
Debater	3.95 ^{***} (0.76)	2.54 ^{**} (0.86)	3.44 ^{***} (0.78)	1.71 [*] (0.79)	0.66 (0.75)	-1.37 (0.81)
Communitarian	2.28 [*] (0.93)	1.21 (1.06)	8.33 ^{***} (0.99)	2.50 ^{**} (0.97)	1.74 (0.92)	0.02 (0.99)
Alienated	-5.37 ^{***} (1.00)	-5.01 ^{***} (1.21)	-1.55 (0.96)	-5.44 ^{***} (1.05)	-5.22 ^{***} (1.12)	2.33 ^{***} (1.09)
Intercept (Indifferent)	53.68 ^{***} (0.50)	46.22 ^{***} (0.57)	46.17 ^{***} (0.51)	48.48 ^{**} (0.52)	47.63 ^{***} (0.50)	48.24 ^{***} (0.53)

3 *Note.* Standard errors of the coefficients are in parentheses. Intercepts are tested against the international scale mean of 50. Data sourced from ICCS 2009.

4 ^{*}*p* < .05; ^{**}*p* < .01; ^{***}*p* < .001.

1 Table 6

2 *Distribution of Students per Country*

Country	Activist	Debater	Communitarian	Indifferent	Alienated
Denmark	18.5%	41.6%	5.3%	31.1%	3.6%
Finland	12.2%	14.3%	14.7%	51.0%	7.8%
Norway	19.8%	17.6%	13.7%	41.6%	7.4%
Sweden	14.5%	26.2%	7.3%	40.6%	11.4%
Overall	16.2%	24.9%	10.2%	41.1%	7.5%

3 *Note.* Data sourced from ICCS 2009.

1 Table 7

2 *Predicting Group Membership Using School Context (Reference Group: Indifferent Students)*

Predictor	Activist			Debater			Communitarian			Alienated		
	95% CI			95% CI			95% CI			95% CI		
	<i>OR</i>	<i>LL</i>	<i>UL</i>	<i>OR</i>	<i>LL</i>	<i>UL</i>	<i>OR</i>	<i>LL</i>	<i>UL</i>	<i>OR</i>	<i>LL</i>	<i>UL</i>
Student level												
Student gender (boy/girl)	1.42***	1.23	1.65	1.33***	1.14	1.54	0.90	0.75	1.09	0.34***	0.27	0.43
SES (books at home)	1.16***	1.08	1.23	1.07*	1.01	1.13	1.14**	1.05	1.24	0.95	0.87	1.03
Discussions outside school	1.06***	1.05	1.07	1.04***	1.03	1.04	1.01*	1.00	1.02	0.94***	0.93	0.95
School level												
% Girls	1.00	0.99	1.01	1.00	0.99	1.01	1.00	0.99	1.00	1.00	0.99	1.01
Avg. home literacy	1.03	0.83	1.29	0.88	0.70	1.11	0.96	0.79	1.18	1.40***	1.06	1.85
Student-teacher ratio	1.04	0.97	1.11	1.09	0.98	1.21	1.00	0.94	1.06	0.96	0.90	1.02
Social problems at school	0.98***	0.96	0.99	0.97***	0.95	0.98	1.00	0.99	1.01	1.01	0.99	1.03

3 *Note.* Avg. = school average; *OR* = odds ratio; *CI* = confidence interval; *LL* = lower limit; *UL* = upper limit. Data sourced from ICCS 2009.

4 **p* < .05; ***p* < .01; ****p* < .001.

1 Table 8

2 *Predicting Group Membership Using Community Context (Reference Group: Indifferent Students)*

Predictor	Activist			Debater			Communitarian			Alienated		
	95% CI			95% CI			95% CI			95% CI		
	<i>OR</i>	<i>LL</i>	<i>UL</i>	<i>OR</i>	<i>LL</i>	<i>UL</i>	<i>OR</i>	<i>LL</i>	<i>UL</i>	<i>OR</i>	<i>LL</i>	<i>UL</i>
Student level												
Student gender (boy/girl)	1.42***	1.22	1.64	1.32***	1.14	1.53	0.89	0.74	1.08	0.34***	0.27	0.43
SES (books at home)	1.17***	1.10	1.25	1.06	1.00	1.12	1.14**	1.05	1.23	0.99	0.91	1.08
Discussions outside school	1.06***	1.05	1.07	1.04***	1.03	1.05	1.01*	1.00	1.02	0.94***	0.93	0.95
Community level												
Size of community	0.94	0.85	1.05	0.94	0.84	1.05	0.90*	0.82	0.99	0.97	0.86	1.11
Resources in community	1.00	0.99	1.02	1.00	0.99	1.02	1.00	0.99	1.02	1.01	0.99	1.02
Opportunities for student participation	1.00	0.99	1.01	0.98**	0.97	1.00	1.01*	1.00	1.02	1.00	0.99	1.01
Social tension in community	1.01	1.00	1.02	1.00	0.99	1.01	1.01	1.00	1.02	1.01*	1.00	1.03

3 *Note.* *OR* = odds ratio; *CI* = confidence interval; *LL* = lower limit; *UL* = upper limit. Data sourced from ICCS 2009.

4 **p* < .05; ***p* < .01; ****p* < .001.

1 Table 9

2 *Predicting Group Membership Using Teaching Context (Reference Group: Indifferent Students)*

Predictor	Activist			Debater			Communitarian			Alienated		
	95% CI			95% CI			95% CI			95% CI		
	<i>OR</i>	<i>LL</i>	<i>UL</i>	<i>OR</i>	<i>LL</i>	<i>UL</i>	<i>OR</i>	<i>LL</i>	<i>UL</i>	<i>OR</i>	<i>LL</i>	<i>UL</i>
Student level												
Student gender (boy/girl)	1.42***	1.23	1.65	1.33***	1.14	1.54	0.89	0.74	1.07	0.34***	0.27	0.43
SES (books at home)	1.16***	1.09	1.24	1.06*	1.00	1.13	1.13**	1.05	1.23	0.97	0.89	1.06
Discussions outside school	1.06***	1.05	1.07	1.04***	1.03	1.04	1.01	1.00	1.02	0.94***	0.93	0.95
Teacher level												
Avg. confidence in teaching methods	0.99	0.96	1.01	0.98	0.95	1.01	0.97*	0.95	0.99	1.04**	1.01	1.07
Avg. participation in school governance	1.03**	1.01	1.06	1.03*	1.00	1.07	1.03*	1.00	1.06	0.99	0.96	1.02
Avg. teacher experience (years)	0.99	0.96	1.01	1.01	0.98	1.04	0.99	0.97	1.02	0.99	0.96	1.02
% Female teachers	0.99*	0.98	1.00	0.99**	0.98	1.00	1.00	1.00	1.01	1.00	0.99	1.00

3 *Note.* Avg. = school average; *OR* = odds ratio; *CI* = confidence interval; *LL* = lower limit; *UL* = upper limit. Data sourced from ICCS 2009.

4 * $p < .05$; ** $p < .01$; *** $p < .001$.