Published Online April 2016 in SciRes. http://www.scirp.org/journal/cehttp://dx.doi.org/10.4236/ce.2016.75075



# Openness in Scandinavian Classrooms: Student Perceptions of Teaching Practices and High Achievers of Civic Knowledge

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Received 7 January 2016; accepted 26 April 2016; published 29 April 2016

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#### **Abstract**

In this paper, we explore how teaching practices in classrooms influence students' civic knowledge achievement in three Scandinavian countries: Denmark, Norway, and Sweden. Using data from the 2009 International Civic and Citizenship Education Study (ICCS), our investigation focuses on the measures of "open classroom climate", which include seven items that ask students how often they experience each of the seven teaching practices during regular lessons. From the students' perspective of teaching practices in the classroom, we hypothesize and assume that there should be a balanced combination of classroom practices where each method/activity carries a different weight or level of importance. Applying logistic regression analysis, we assess the effect of each of the practices on the probability with which a student becomes a high achiever of civic knowledge (as represented by odds ratios). Our results show both similarities and differences in the combinations of classroom practices that have contributed to students' high civic knowledge achievement in the three Scandinavian countries. Our findings provide useful messages to teachers in the classroom, and they also have implications for teacher education and research.

### Keywords

Openness in the Classroom, ICCS 2009, Civic Knowledge Achievement, Teaching Practices, Student Perception

#### 1. Introduction

Besides being geographically located on the same peninsula with rather similar political and social welfare sys\*Corresponding author.

**How to cite this paper:** Huang, L., & Biseth, H. (2016). Openness in Scandinavian Classrooms: Student Perceptions of Teaching Practices and High Achievers of Civic Knowledge. *Creative Education, 7,* 713-723. <a href="http://dx.doi.org/10.4236/ce.2016.75075">http://dx.doi.org/10.4236/ce.2016.75075</a>

tems, the three Scandinavian countries (Denmark, Norway and Sweden) also share some common cultural and historical characteristics, including a common language root. The three countries all have an education system featuring free public schools that provide compulsory schooling to all children from the ages of 6 or 7 years to the age of 16 years. As established democratic societies, Scandinavian countries have historically used the schooling system as a tool to strengthen democracy by preparing the young for their future roles as citizens (Biesta, 2006; Biseth, 2009, 2012; Jacobsen et al., 2004). **Table 1** presents the statistics featuring the education sector in the three countries. With some small variations between the countries, the three countries stand out from the Organisation for Economic Cooperation and Development (OECD) average in terms of both investment in education, as indicated by the percentage of gross domestic product (GDP) spent on education, and achievement in education, which is indicated by the percentages of the population of aged 25 years and older with education attainment at, or beyond, the secondary school level.

In all three countries, civic and citizenship education as apriority is stated rather implicitly, rather than explicitly, in educational policies (Biseth, 2009). There are only minor variations in the implementation of civic and citizenship education across the three countries, as educational institutions approach these areas by integrating these topics into several study subjects in school and emphasising student participation (Bruun, 2013; Lind, 2013; Mikkelsen & Fjeldstad, 2013; Schulz et al., 2010). Scandinavian students are regarded as "above average" achievers by international comparisons, as reported in the 2009 International Civic and Citizenship Education Study (ICCS 2009). In comparison with an average of 28% students reached Level 3 proficiency in civic knowledge among the 36 participant countries reported by the ICCS 2009, over half (58%) of Danish students, 32% of Norwegian students, and 40% of Swedish students did so (Schulz et al., 2010).

Previous research on the factors that contribute to individual achievement in civic knowledge, civic attitudes, civic behaviours, and civic engagement has repeatedly demonstrated the significant influence of one's home (Levinson, 2010). First, parents' socio-economic status is significantly and positively associated with young people's civic knowledge and behavioural development in the cases of the United States (Zaff et al., 2009) and elsewhere around the world (Schulz et al., 2010). Parental interest in political and social issues, as well as their discussion of these issues with their children at home, not only significantly influences young people's civic knowledge achievement (Schulz et al., 2010), but also contributes to the development of children's interests in these issues, leading to their eventual civic engagement (Lauglo & Øia, 2006; McIntosh et al., 2007; Richardson, 2003; Seider, 2012). Moreover, research finds that parents' own civic engagement also has a positive association with children's social, civic, and political participations (Cicognani et al., 2012).

However, when it comes to the influence of schools and classrooms in student civic knowledge achievement, civic attitudes, and behaviour, the research evidence is often limited and sometimes presents mixed messages. For example, an "open classroom climate" as an "individual learning context" is found to have a significant positive effect on a student's achievement of civic knowledge in many countries. At the same time, when analysing an "open classroom climate" as an aggregate of "school learning context", it does not have significant effect on student achievement at school level in many countries in the ICCS 2009 study (Schulz et al., 2010; Mikkelsen et al., 2011; Lieberkind, 2015). Barber et al. (2015) have pointed out that if students in a classroom have different perceptions of their classrooms, their aggregate perception about the classroom would be less reliable than the perceptions held by students in a classroom with a strong level of agreement. This complicates how the results of the ICCS can be of use in teachers' practice.

Table 1. Indicators of education among the three Scandinavian countries in comparison with the OECD average.

	Denmark	Norway	Sweden	OECD average
Investment in education as % of GDP	8.8	8.8	7.0	5.8
Population (ages 25 - 34 years) with at least upper secondary education attainment in $\%$	81.75	82.07	90.79	82.47
Population (ages 25 - 64 years) with tertiary education attainment in $\%$	34	38	35	32
Years of compulsory schooling	10	10	9	9
Ratio of students to teaching staff in secondary education		10	12	14

Data source: OECD (2013, 2015).

With the aim of contributing to teaching practices in the classroom, we ask a specific research question: to what extent does each of the teaching practices in the classroom contribute to increased students' civic knowledge achievement in the three Scandinavian countries? Our investigation takes an approach which differs from that of previous studies on the relationship between an open classroom climate and civic knowledge achievement among students. Instead of following the previous assumption that a linear and positive relationship between an open classroom climate and student achievement exists, we propose a consideration whereby the positive relationships between the classroom practices and student achievement are not all straight and linear. Our intended message to teachers in practice would be that there is a positive relationship between an open classroom climate and student achievement, but this does not mean that applying all the practices more frequently is better. Some activities should be applied often in the classroom, while it might be best if others are practiced less.

## 2. How to Understand Civic and Citizenship Education in Practice

The contemporary concept of citizenship extends beyond understanding it as a legal status, beyond the link between the citizen and the state, and beyond the territory of a nation state both in the research literature and in educational and social policies (Huang & Holmarsdottir, 2015). The contemporary notion of civic and citizenship education focuses on both civic education and citizenship education, as well as on their relationship with one's knowledge and understanding of formal institutions and the process of civic life (such as voting in elections), and one's knowledge and understanding of opportunities to participate and engage in both civic and civil society (Schulz et al., 2010). In addition, as cited by teachers and school principals from 38 participant countries of the ICCS 2009 study, the most important aims of civic and citizenship education include promoting one's knowledge of social, political, and civic institutions; citizens' rights and responsibilities; promoting students' critical and independent thinking; and developing students' skills and competencies in conflict resolution (Schulz et al., 2010: p. 15).

In 2005, European educational policies defined citizenship education as "school education for young people, which seeks to ensure that they become active and responsible citizens capable of contributing to the development and well-being of the society in which they live" (Eurydice, 2005: p. 10). In 2012, the European Commission specified that citizenship education would be carried out in school as "the aspects of education at the school level intended to prepare students to become active citizens, by ensuring that they have the necessary knowledge, skills and attitudes to contribute to the development and well-being of the society in which they live" (Eurydice, 2012: p. 8). However, there is a lack of consensus among scholars about what concrete role schools should play in educating democratic citizens (Fischman & Haas, 2012). Among the different voices heard from different perspectives, Biesta (2011) argues that teaching citizenship should be distinguished from learning democracy. Education for democracy can be understood as education that prepares children for their future participation in democratic life by providing relevant knowledge, skills, and values. However, there are limits to what can be achieved when teaching about democracy. Biesta (2006) argues that this kind of education will not suffice in the promotion of democracy and democratic values. As such, there is an additional necessity for democratic forms of education, where students learn about democracy through participation in the democratic life itself. This is education through democracy, and it implies that there is an existence of democratic values that permeates all activities in school. Students cannot become democratic if schools do not practice democratic ideals (Biesta, 2006).

Meanwhile, Torney-Purta (2004) maintains that the civic and citizenship education policy and curriculum alone cannot guarantee the development of democratic values and attitudes among young people; rather, the presence of an open/democratic classroom climate can foster one's potential to develop civic values and virtues. A democratic classroom is characterized by a teacher that seeks to implement democratic and liberal values in teaching and learning activities (Ehman, 1980; Hahn, 1999; White, 1996). In this way, students are encouraged to express their own opinions, to take part in discussions, and engage in class matters. Previous research has repeatedly demonstrated the effective and significant role that teachers play in facilitating an interactive classroom. Teachers' classroom use of interactive discussions (Rubin, 2012; Torney-Purta & Wilkenfeld, 2009), as well as discussions and debates pertaining to controversial issues in the classroom (Hess, 2009; Perliger et al., 2006)—in addition to students' experiences of what teachers do and what students do in an open climate classroom (Isac et al., 2014; Knowles & McCafferty-Wright, 2015; Schulz et al., 2010)—are all positively associated with higher civic knowledge/skill achievement.

## 3. Data and Methods

In this investigation, we used student data from Denmark, Norway, and Sweden, as obtained from the IEA's International Civic and Citizenship Education Study (ICCS) conducted in 38 countries in 2009. This was an international survey of students in their eighth year of school in most education systems, provided that the average age of students in this grade was 13.5 years or above at the time of the assessment. Both 8<sup>th</sup> graders and 9<sup>th</sup> graders from Norway participated in the ICCS 2009 study; here, we used the results of 9<sup>th</sup> graders in our analysis, as Norwegian 8<sup>th</sup> graders are one year younger than their Danish and Swedish peers in the same grade. The ICCS 2009 study assessed students' civic knowledge using a 79-item test, which includes four content domains: civic society and systems; civic principles; civic participation; and civic identities. One fourth of the test items contain factual knowledge of civics and citizenship, and the remaining 75% of items tested reasoning and analysis. The test items were grouped into seven clusters, and each student would complete one test booklet containing three of the seven clusters (Schulz et al., 2010).

Table 2 presents the number of cases, civic knowledge achievement, and student background variables used in our analysis. The ICCS 2009 data (accessible at the IEA study Website: <a href="http://www.iea.nl/iccs 2009.html">http://www.iea.nl/iccs 2009.html</a>) contain five plausible values created from students' test results during the ICCS 2009 (Brese et al., 2011); we use the first plausible value of student civic knowledge (PV1CIV) in our analysis. From the civic knowledge scores (PV1CIV), we extracted a group of students with high civic knowledge achievement, which is defined as a score at 601 and above (i.e., one standard deviation above the international mean at 500). Table 2 also presents the distribution of those "high achievers" among the three countries. While a total of 15% of students in the ICCS 2009 study had a civic knowledge achievement score that was one standard deviation above the mean, 41.5% of students from Denmark, 30.5% of students from Norway, and 26.5% of students from Sweden were considered "high achievers".

The ICCS 2009 study also includes aspects of students' civic dispositions and attitudes among students, which are important when painting a nuanced picture of a group's potential democratic behaviour. Entering into such an in-depth and interesting discussion, however, is beyond the scope of this article, as we focus only on the effects of classroom practices on students' civic knowledge. Therefore, we limit our study to the knowledge component of the ICCS study.

For the measures associated with teaching practice, we used the question that measured students' perceptions of the classroom climate in the ICCS study (also referred to as the scale measuring the students' sense of "an open classroom climate"), which asked students to rate the frequency ("never", "rarely", "sometimes", and "often") with which each of seven events occurred during a regular class hour. These events included discussions of political and social issues and were classified as follow: 1) students are able to disagree openly with their teachers; 2) teachers encourage students to make up their own minds; 3) teachers encourage students to express their opinions; 4) students bring up current political events for discussion in class; 5) students express opinions in

Table 2. Student data from ICCS 2009 used for the analyses.

	Denmark	Norway	Sweden
Number of students N	4508	2926	3464
Average age, years (standard deviation)	14.9 (0.39)	14.7 (0.30)	14.8 (0.35)
Average civic knowledge achievement PV1CIV (standard deviation)	575 (98)	541 (103)	536 (100)
Students with high civic knowledge achievement (i.e., a PV1CIV score at 601 and above, one standard deviation away from the international average), %	41.5	30.5	26.5
Girls, %	52.1	49.9	50.1
Parents' education attainments at the lower secondary level (ISCED 1, 2) %	4.9	3.7	5.8
Parents' education attainment at the upper secondary level (ISCED 3) %	21.1	20.4	20.8
Parents' education attainment at the post-secondary level or short tertiary level (ISCED 4, 5B), $\%$	51.4	24.5	22.1
Parents' education attainment at the tertiary level or higher (ISCED 5A or 6), %	22.6	51.4	51.3

Note: All between-country differences are significant, p < 0.01, except for average age and the average civic knowledge achievement (PV1CIV) between Norway and Sweden.

class even when their opinions are different from most of the other students; 6) teachers encourage students to discuss the issue with people having different opinions; and 7) teachers present several sides of the issues when explaining them in class. **Table 3** presents the descriptive statistics of the seven response items that measured an open/democratic classroom in the ICCS 2009 study.

Three aspects of the data analysis are reported: the descriptive analysis, correlation coefficients, and logistic regression. We first present, discuss, and compare the descriptive analysis of students' perceptions of their experiences in an open classroom across the three countries. The descriptive analysis shall provide a general picture of which classroom practices rarely or often occur among the three countries. Then, we look into each of the classroom practices and investigate its correlation with students' civic knowledge achievements across the three countries. We compare the strength of each of the classroom practices across in correlation with civic knowledge achievement among the three countries. Third, we apply logistic regression to estimate the effect of these classroom practices on the probabilities with which students become high achievers of civic knowledge. As there are four levels of application of the seven classroom practice items (i.e., never, seldom, sometimes, and often; see Table 3), a logistic regression analysis can estimate the effect of each level of application of each practice item using an odds ratio (OR). For example, an odds ratio can tell us how likely a student is to become a member of the group "high achievers" when a classroom practice (such as "the teacher encourages students to express their opinions") changes from "never" to "seldom" or from "never" to "often".

Our intention is not to try to explain the variation of civic knowledge achievement among the students between the three countries, nor is the intention to determine which factor outperforms the others in statistical terms. Rather, we want to highlight that how each classroom practice is implemented, as well as how and to what extent a combination of different classroom practices contribute to students' ability to achieve high civic knowledge in the three countries. Our analyses should provide some insightful and practical recommendations to encourage investment in successful democratic practices in the classroom for both teachers and teacher education programmes.

#### 3.1. Result 1: Similarities of Classroom Practices in the Three Countries

As shown in **Table 3**, classroom practices among the three countries share some similarities. One similarity is that the option with the lowest frequency is "never" for each of the practices in all three countries, while

Table 3. Frequencies of responses on seven items measuring an open classroom climate (%).

		Students are able to disagree openly with their teachers	Teachers encourage students to make up their own minds	Teachers encourage students to express their opinions	Students bring up current political events for discussion in class	Students express opinions in class even when their opinions are different from most of the other students	Teachers encourage students to discuss the issue with people having different opinions	Teachers present several sides of the issues when explaining them in class
	Never	1.7	2.9	2.1	8.9	1.8	6.6	7.1
Denmark	Seldom	6.9	9.7	5.6	32.8	11.5	23	22
	Sometimes	39.6	34.1	25.8	41.8	38	43.7	41.2
	Often	51.9	53.3	66.5	16.6	48.7	26.7	29.7
	Never	3.3	4.6	4.9	9.9	4.9	10.3	6.2
Norway	Seldom	10.1	13.5	13.6	33.9	12.5	26.4	15.5
Norway	Sometimes	40	35.5	37	40.3	34.7	42.4	43.1
	Often	46.6	46.3	44.4	15.9	47.8	21	35.2
	Never	3.5	4.3	3.7	12.4	4.5	10.4	9
Sweden	Seldom	11.2	11.9	9.9	37.1	18.6	30.2	29.2
Sweden	Sometimes	38.7	36.8	32.8	37	47	40.4	47.1
	Often	46.7	47.1	53.6	13.5	29.9	19.1	14.7

Note: All differences between countries are significant, p < 0.001.

"sometimes" and "often" are the options most frequently chosen for most classroom practice items across these countries. **Figure 1** is a visual presentation of students' average reporting practices in a regular classroom on average. To understand the numbers, we refer to the response alternatives to each item of the question, as described earlier (i.e., 1 = "never", 2 = "rarely", 3 = "sometimes" and 4 = "often"), where a mean score close to the value of 4 indicates that a practice often occurs, while a mean score close to the value of 2 indicates that a practice seldom occurs. Following a rather similar pattern, in a regular classroom of Scandinavian schools, it was noted that students are often able to "openly disagree with teachers" and teachers encourage students to "make up their own minds" and "to express their opinion". Meanwhile, in a regular classroom in all three countries, students are seldom able to "bring up current political events for discussion". Moreover, students are only sometimes able to "express opinions in class even when their opinions are different from most of the other students", that teachers "encourage students to discuss the issue with people having different opinions", and teachers "present several sides of the issues when explaining them in class". However, most of the minor differences in students' experiences of an open classroom across the three countries are statistically significant.

# 3.2. Result 2: The More the Better: Classroom Practices Are All Positive for Students' Civic Knowledge Achievement

Table 4 presents the correlation coefficients of students' civic knowledge achievement in association with each of the practice items from a regular classroom in the three countries. First, all of the classroom practice items correlated positively with student civic knowledge achievement. For example if, in a regular classroom, students were "seldom" to "sometimes" or from "sometimes' to "often" when students are able to "disagree openly with their teachers" (r = 0.261 in Denmark, r = 0.279 in Norway, r = 0.265 in Sweden), Scandinavian students were able to achieve a 25-point increase, within a standard deviation, on their civic knowledge score. Second, in comparison with Denmark and Sweden, nearly all of the correlation coefficients related to the classroom practice items on achievement are stronger in Norway, except for the item "students bring up current political events"

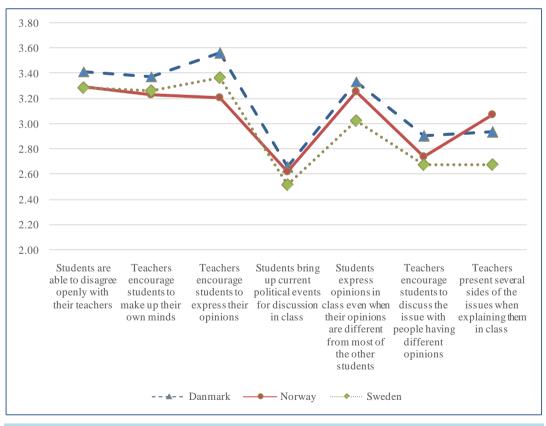


Figure 1. Students' average reporting patterns on the practices encountered in a regular classroom (means).

Table 4. Correlation coefficients of classroom practices with student civic knowledge achievement (PV1CIV).

	Denmark	Norway	Sweden
Students are able to disagree openly with their teachers	0.261	0.279	0.265
Teachers encourage students to make up their own minds	0.293	0.329	0.268
Teachers encourage students to express their opinions	0.205	0.286	0.245
Students bring up current political events for discussion in class	0.145	0.114	0.108
Students express opinions in class even when their opinions are different from most of the other students	0.068	0.310	0.188
Teachers encourage students to discuss the issue with people having different opinions	0.110	0.166	0.144
Teachers present several sides of the issues when explaining them in class	0.196	0.238	0.187

Note: All coefficients are significant, p < 0.01.

for discussion in class". However, students' ability to take initiatives in the classroom (i.e., when a student brings up current political events for discussion in class) shows a weakly positive correlations with students' civic knowledge achievement in all three countries. Third, a contrast was found among the three countries when "students express opinions in class even when their opinions are different from most of the other students" (i.e., opinions against the mainstream), which correlates quite strongly with students' civic knowledge achievement in Norway, but very weakly with that in Denmark and Sweden.

Nevertheless, the relatively moderate correlation results in **Table 4** do not necessarily imply that there is a straight linear relationship between the frequency with which students' experience each of the classroom practices and high achievement in civic knowledge. The results provide us with a rather vague message as to how the Scandinavian teachers implement these practices in their classrooms since we cannot conclude that the more often they apply these practices, the better it is for student achievement.

## 3.3. Result 3: Some Practices Are More Important than Others for the Students with High Civic Knowledge Achievement

**Table 5** presents the logistic regression analysis using the frequency with which students encounter each class-room practice to predict their "membership" into the group of high achievement in terms of civic knowledge. The odds ratio (OR) tells us the extent to which each student is more or less likely to belongs to the "high achievers" group when a classroom practice changes from "never" to "rarely", or from "never" to "sometimes", or from "never" to "often". We use student gender and parental education attainment as the control variables. In Model 1, we include only the control variables, while we include the classroom practice variables in Model 2. We observe some changes in the effect of gender and levels of parental educational attainments from Model 1 to Model 2, indicating that classroom practices have moderating effects on the influence of gender and parental education on a student's ability to become a high achiever. In all three countries, inclusion of the classroom practice variables reduces some of the gender effect and the effects of parental education; this is especially true for the effects observed for parental education in Denmark and Norway. However, the increase in parental education levels consistently and significantly doubles and triples the chances with which Scandinavian students become high achievers.

A few teaching practices are significant in predicting a student's likelihood of becoming a "high achiever" in the three countries, although there are some similarities and differences. For instance, those students who experience often in a classroom where "students are able to disagree openly with their teachers" are over twice (OR = 2.36) and three times (OR = 2.97) more likely to be high achievers in Denmark and Sweden, respectively, than students who never experience this practice in the classroom. Second, students in classrooms where the teachers often "encourage students to make up their own minds" are two or three times more likely than those in classrooms where the teacher never does this to become a high achievers of civic knowledge in Denmark (OR = 2.41) and in Norway (OR = 3.31), respectively.

In Denmark, the practice where "students bring up current political events for discussion in class" significantly increases the odds with which students achieve high civic knowledge by 53% (OR = 1.53), although this same practice has no effect on students in Norway and Sweden. While the effect is not statistically significant

Table 5. Logistic regression analysis of students' experiences with classroom practices predicting high civic knowledge achievement in the three countries (OR).

	Model 1			Model 2		
Control variables: background	Denmark	Norway	Sweden	Denmark	Norway	Sweden
Student gender (reference: "boy")						
Girl	$1.17^*$	1.42***	1.35***	1.08	1.20*	1.14
Parents' education attainments (reference: "lower secondary level, ISCED 1, 2")						
Upper secondary level (ISCED 3)	2.06***	3.01**	2.94***	1.96**	$2.47^{*}$	3.10**
Post-secondary level or short tertiary level (ISCED 4, 5B)	4.22***	5.16***	5.79***	3.97***	3.91**	5.96***
Tertiary level or higher (ISCED 5A or 6)	7.92***	9.68***	8.46***	6.92***	7.43***	8.14***
Independent variables: teaching practices						
Students are able to disagree openly with their teachers (refere	ence: "never")					
Rarely				0.90	1.13	1.62
Sometimes				1.31	1.22	1.75
Often				$2.36^{*}$	1.68	2.97**
Teachers encourage students to make up their own minds (ref	erence: "never	")				
Rarely				1.06	1.50	0.95
Sometimes				1.35	2.06	1.12
Often				2.41**	3.31**	1.76
Teachers encourage students to express their opinions (referen	nce: "never")					
Rarely				1.55	1.94	0.74
Sometimes				1.32	1.96	0.84
Often				1.64	2.24	1.01
Students bring up current political events for discussion in cla	ss (reference: '	"never")				
Rarely				1.30	1.01	1.07
Sometimes				1.19	1.03	1.20
Often				1.53**	0.00	1.26
Students express opinions in class even when their opinions a students (reference: "never")	re different fro	m most of the	other			
Rarely				1.96	1.46	1.34
Sometimes				1.85	1.68	1.64
Often				1.44	2.60**	1.69
Teachers encourage students to discuss the issue with people "never")	having differer	nt opinions (re	eference:			
Rarely				0.87	0.98	0.80
Sometimes				$0.69^{*}$	0.73	$0.65^{*}$
Often				$0.66^{*}$	0.65	0.67
Teachers present several sides of the issues when explaining t	hem in class (r	eference: "ne	ver")			
Rarely				1.31	1.67	0.90
Sometimes				1.58**	1.70	1.07
Often				1.80***	1.91*	1.44
Variance explained (Nagelkerke R <sup>2</sup> )	8.3%	8.3%	7.2%	19%	17.5%	15.5%
Chi-square/df	265.7/4	175.2/4	163.7/4	632.9/25	355.6/25	353.7/25

p < 0.05, p < 0.01, p < 0.001, p < 0.001.

for Danish and Swedish students, the classroom where "students [often] express opinions in class even when their opinions are different from most of the other students" increases students' odds of becoming high achievers in Norway by two and half times (OR = 2.60) when compared to those in classrooms without this practice. Moreover, the classroom practice where "teachers [often] present several sides of the issues when explaining them in class" significantly increases the odds with which students attain high achievement in both Denmark (OR = 1.80) and Norway (OR = 1.91), while this practice is not statistically significant for high achievers in Sweden. Interestingly, the classroom practice where "teachers encourage students to discuss the issue with people having different opinions" appears to decrease students' odds of becoming high achievers in all three countries; this is significantly the case for students in Denmark and Sweden. It appears that students in classrooms where they "sometimes" (OR = 0.69) or "often" (OR = 0.66) encounter this practice in Denmark, as well as those who "sometimes" encounter it in Sweden (OR = 0.65), have a 30% lower probability of becoming high achievers of civic knowledge.

The results presented in **Table 5** illustrate the different patterns of classroom practices encountered during regular lessons among Scandinavian students who are high achievers in civic knowledge. Among Danish high achievers, it was found that often, these "students are able to disagree openly with their teachers" in their classrooms, "teachers encourage students to make up their own minds", "students bring up current political events for discussion", and "teachers present several sides of the issues when explaining them": however, never or rarely do "teachers encourage students to discuss the issues with people having different opinions". In the classrooms featuring Norwegian high achievers, it is often that "teachers encourage students to express their opinions", "students express their opinions even when their opinions are different from most of the other students", and "teachers present several sides of the issues when explaining them". In the classrooms with Swedish high achievers, it is often the case that "students are able to disagree openly with their teachers" and it is never or rarely that "teachers encourage students to discuss the issues with people having different opinions".

#### 4. Discussion

An open or democratic classroom is probably the hardest practice to implement at a time when standardized testing places pressure on teachers to deliver a standardized curriculum instead of facilitating discussion and critical thinking. Inspired by previous research, the evidence shows that certain teaching practices encourage students' active engagement in the classroom; this is a key element that fosters student learning in civic knowledge (e.g., Hess, 2009; Rubin, 2012), as well as science, technology, engineering and mathematics (STEM) subjects (e.g., Lee & Kinzie, 2012). Our results provide ample support for us to conclude that certain teaching practices facilitate student civic knowledge learning in the classroom when teachers encourage students to engage in discussions and when democratic values are implemented in teaching practices.

More importantly, our analyses provide a picture of the teaching practices employed in a classroom of Scandinavian high achievers in civic knowledge. All Scandinavian students experience rather similar classroom practices. For example, it is sometimes or often the case that "students are able to openly disagree with teachers", and "teachers encourage students to make up their own minds" and "to express their opinions"; less often, "students bring up current political events for discussion" (see **Figure 1**). All of these practices appear to be positively correlated with students' achievement in civic knowledge (see **Table 4**). However, for students with high achievement in civic knowledge, the positive effects of classroom practices become selective (see **Table 5**)—i.e., this positive effect is not found for all practices implemented in the classrooms that supposedly constitute "an open classroom climate", which supposedly should be the case that the more often these practices were used, the better for students' civic learning.

Certainly, our study can offer a "repeated" message to teachers in classrooms insofar as there are some instances where certain practices, when used more frequently ("the more the better"), enhance student civic learning. Such practices include those where teachers are open minded, where they present issues with several sides, and they encourage students to disagree, to make up their own minds, and to express their opinions. At the same time, instead of doing fewer of—or simply dismissing—those practices that have little effects or even negative effects on student achievement found in our analyses, we should ask questions and examine them more closely. For example, we should ask why the practices such as those that encourage students to take initiative (e.g., "students bring up current political issues for discussion in class") increase the chances with which Danish, but not Norwegian or Swedish, students will become high achievers. We should also ask why the practice where

"teachers encourage students to discuss the issue with people having different opinions" does not yield a positive effect among high achieving students in all Scandinavian schools.

The novelty of our analysis lies in its approach to the scale of an "open classroom climate". In this study, individual students' perceptions of this classroom environment are determined by each teaching practice that is employed in this setting. We aimed to obtain insight into how each classroom practice is implemented, and how to what extent Scandinavian teachers combine these practices in their classrooms. Our results also carry implications for teacher education programmes in the three countries, particularly with respect to how well Scandinavian teachers-to-be are equipped with the necessary knowledge, competence, and skills to facilitate a truly democratic and open classroom climate, which includes initiatives made by both teachers and students. As a final point in this paper, we must admit that our study has its limitations insofar as it used ICCS 2009 data without 1) critiques on the definitions and concepts applied in assessing student learning in that study; and 2) following the intended data structure of the "open classroom climate" scale. In addition to inviting critiques and debates on the issues discussed in our study, we call for future research to be carried out in the Scandinavian schools to assess how practices where students are encouraged to take initiative are understood, conceived, and implemented by teachers in the classroom.

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