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Measuring environmental citizenship in a Nordic civic and citizenship education context (Times New Roman 16, Bold, Center Alignment)

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Keywords: Education for environmental citizenship; ICCS 2016; Pragmatism; Experiential learning; Habit formation (the word keywords Times New Roman 12 Bold, maximum 6 keywords in Times New Roman 11 separated by ;)

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Abstract: The objective of this paper is to identify the extent to which the school environment and these three activities are efficacious in fostering environmental citizenship attitudes and behaviours in students. We use data from the 2016 International Civic and Citizenship Education Study (ICCS) that took place in four Nordic countries: Denmark, Finland, Norway and Sweden (students N=18,962, teachers N=6,119, school principals N=630). We look at students' attitudes, awareness and behaviour in relation to the educational goals and pedagogical means of teachers and school leaders working towards environmental citizenship. Drawing on the pragmatic framework of John Dewey and the contemporary experiential learning model, we identify some key school conditions and pedagogical approaches towards education for environmental citizenship education. We first categorize responses to questions in the ICCS study concerning the activities that promote environmental citizenship through (i) habit formation, (ii) awareness raising and (iii) a combination of habit and awareness. Second, we create a composite score (Nardo et al. 2005) on environmental citizenship education at the school level by summing all the habit-forming and awareness-forming initiatives and activities as reported by the principals, teachers and students. The two steps analyses enable us to present an overview of environmental citizenship education in the Nordic schools (Table 1). Finally, we test if there is an effect of school environmental citizenship education practice on student environmental citizenship measured by their knowledge, attitudes, behavior and future intended actions (Table 2). The main findings are 1) Nordic teachers and principals differ considerably from each other between the four countries when it comes to their responses on if or not they consider 'promoting respect for and safeguard the environment' as one the most important aims of civic and citizenship education. However, 2) environmental citizenship education practices at Nordic schools appear to very similar and 3) Nordic students are also similar with each other across the four countries. Nevertheless, 4) we find that school environmental practice has a weak positive and significant effect on student environmental citizenship while student achievement in civic knowledge has stronger effect on their environmental citizenship than school practice does. However, 5) rather limited variance of student environmental citizenship is explained by individual and school factors included in the analyses (Table 2). We recommend future research taken into consideration factors beyond the classroom and the schoolyard that could have significant influence on student environmental citizenship. (The word Abstract in Times New Roman 12 Bold, the text in Times New Roman 11, don't change lines, don't create paragraphs)

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Table 1: An overview of environmental citizenship education in Nordic schools (Table 1: in Times New Roman 12 Bold Italics; the table caption in Times New Roman 11 Italics, Table alignment centred, the content of a table in Times New Roman 10)

	*One of the most important aims of CCE is ‘promoting respect for and safeguard of the environment’		Average student civic knowledge achievement	Average composite score of environmental citizenship education practices taken place in schools	Average composite score of student environmental citizenship
	School leaders	Teachers			
Denmark	10.4 (2.4)	21.4 (1.7)	586 (3.0)	21.7 (0.6)	7.8 (0.1)
Finland	51.8 (4.1)	55.8 (1.8)	577 (2.3)	27.4 (0.2)	8.7 (0.1)
Norway	24.2 (3.6)	39.0 (1.8)	564 (2.2)	23.5 (0.4)	8.3 (0.1)
Sweden	30.3 (4.5)	43.8 (1.3)	579 (2.8)	23.4 (0.4)	8.7 (0.1)

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Table 2: Regression of the school and student variables on student environmental citizenship (standardised coefficients)

	Denmark	Finland	Norway	Sweden
Composite score of school environmental citizenship education practices	0.05	0.05*	0.09*	0.05*
Student civic knowledge achievement (PV1-5)	0.09*	0.23*	0.17*	0.30*
Student gender (boy=0, girl=1)	0.17*	0.28*	0.16*	0.14*
Parents’ highest educational attainment (lower than university education=0, university and higher education with degrees=1)	0.10*	0.02	0.04*	0.01
Student migration status (native=0, 1=2nd generation or 1st generation)	0.02	0.02	0.06*	0.10*
Variance explained in percentage	5.4%	16.3%	7.8%	12.6%

Note: Numbers in bold and with * denote coefficients significant at the 0.05 level. (Notes in Times New Roman 9)

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Reference: (the word reference in Times New Roman 12 Bold)

Cheah, S.L. & Huang, L. (in review) Environmental citizenship in a Nordic civic and citizenship education context: from the perspectives of students, teachers and school leaders. Submitted to *Nordic Journal of Comparative and International Education* (NJCIE). <https://journals.hioa.no/index.php/nordiccie/index> (The text of the references in Times New Roman 10, Paragraph justified, Indentation Hanging 0.5 cm, Use APA 6th edition for formatting references, don’t leave empty line between references)