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Different Media Education Approaches Predict Distinct Aspects of Digital Citizenship

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Abstract

Based on a national survey of 8,915 students, this study examines the prevalence of different types of media education practices in Swiss upper secondary schools and their relationship with students' online civic engagement and respectful online behavior. Descriptive statistics reveal that schools place little emphasis on media education and that current practices focus primarily on protective media education approaches. Results from multi-level hierarchical multiple regression analysis show that expressive media activities positively predict students' online civic engagement but not respectful online behavior, whereas addressing topics such as the 'dangers of the internet' predicts respectful online behavior but not online civic engagement. These findings underscore the challenge of promoting digital citizenship education, which simultaneously encourages civic engagement and respectful behavior. Additionally, there is a significant negative correlation between online civic engagement and respectful behavior, suggesting that digital citizenship frameworks encompassing both dimensions are more prescriptive than empirical in nature and that diverse digital citizenship profiles may exist, with some being more respectful butt less civically engaged, and others being more civically engaged but less respectful.

Keywords: media education, digital citizenship education, online civic engagement, online political participation, online respectful behavior, netiquette

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1. Introduction

Research on youth political engagement shows two contrasting trends. A prominent trend shown by many studies from Switzerland (gfs.bern, 2018, 2020, 2023), Germany (Hurrelmann et al., 2019), and other countries is that the political engagement of young people in institutionalized forms of politics is low or even decreasing. In Switzerland, for example, young people are less likely to vote than their counterparts in other European countries (Grassi et al., 2024) and they are less likely to vote than older people, which is often seen as a problem for democracy (Wittwer, 2015). Furthermore, about 30% of young people also do not have the right to participate in voting because they do not possess Swiss nationality (Bundesamt für Statistik, 2023). However, several scholars have pointed out that young people have a different understanding of what the political dimension is, and that they are often involved in "unconventional" forms of politics: the so-called participatory politics (Weiss, 2020; Parth et al., 2020; Jenkins, 2009; Kahne et al., 2016). These forms of politics are peer-based, nonhierarchical, interactive, and independent of elite-driven institutions and can help shift cultural and political understandings and create pressure for change (Jenkins, 2009; Kahne et al., 2016). National surveys show that these unconventional forms of politics are also present in Switzerland and seem to have an impact on the mobilisation of young people, although their relevance and acceptance among young people seems to have declined slightly in recent years (gfs.bern, 2018; gfs.bern, 2022). Digital media play a crucial role in participatory politics by making it easier for citizens to join political campaigns, mobilize their contacts, participate in fundraising, sign online petitions, and engage in political debates. For this reason, several scholars consider school-based media education an opportunity to foster greater civic and political engagement among young people (Mihailidis & Thevenin, 2013). However, only a few large-scale survey studies have investigated the relationship between school-based media education practices and students' online civic engagement (Bowyer & Kahne, 2020; Martens & Hobbs, 2015). A large-scale panel study by Kahne and Bowyer (2020) shows that providing students with opportunities to learn about the creation and sharing of digital content has a significant impact on students' online civic engagement. Nonetheless, not much is known about the situation in Switzerland and whether these findings also apply in this particular context. Furthermore, existing studies on the impact of media education often focus either on a critical or a creative-expressive approach to media education (Botturi, 2019). To the author's knowledge, no study has compared the potential of different types of media education practices at schools in promoting students' online civic engagement. Moreover, existing studies often focus only on online civic engagement, leaving out relevant digital citizenship dimensions, such as online respectful behavior (Jones & Mitchell, 2016). Therefore, this study investigates the extent to which Swiss upper secondary school students have the opportunity to engage in different types of school-based media education practices and whether different types of school-based media education practices are related to students' online civic engagement and respectful behavior.

This study aims to contribute to the understanding of the complex mechanisms involved in young people's development of digital citizenship (Choi, 2016; Jones & Mitchell, 2016; Krutka & Carpenter, 2017). By identifying school-based media education practices that are likely to be particularly effective in promoting young people's digital citizenship practices, this study may also inform practitioners and policymakers interested in implementing school digital citizenship education practices.

1.1 Online civic engagement and digital citizenship

In the last few decades, the possibilities of political and civic participation have expanded beyond traditional forms, such as voting, demonstrating, or militating in a political party (Choi, 2016; Isin & Ruppert, 2020; Theocharis, 2015; Theocharis & van Deth, 2018a, 2018b). Digital technologies have especially opened up a landscape of new participation options, such as signing online petitions, mobilizing social networks, coordinating online and offline activities and protests, engaging in online discussion, disseminating political content online, and participating in online campaigns. Many terms have been proposed to describe this new landscape of phenomena. Jenkins et al. (2016) developed the concept of «participatory politics» to describe "interactive, peer-based acts through which individuals and groups seek to exert both voice and influence on issues of public concern" (p. 41). The authors argue that these forms of participation often operate outside traditional and hierarchical political power structures.

Theocharis (2015) introduced the term "digitally networked participation," which can be understood as a networked media–based personalized action that is carried out by individual citizens with the intent to display their own mobilization and activate their social networks in order to raise awareness about, or exert social and political pressures for the solution of, a social or political problem (p. 6).

He criticized initial scholarly hesitance to recognize digital acts as meaningful political participation and argued that digitally networked participation should be recognized as a legitimate form of political participation and included in surveys and studies on democratic engagement.

Another term that has emerged to describe new ways to engage in society in the digital age is "digital citizenship." Many different understandings of the term exist (Chen et al., 2021; Choi, 2016; Heath, 2018; Isin & Ruppert, 2020; Krutka & Carpenter, 2017). One of the most well-known conceptualizations of the term, which was popularized by the International Society for Technology in Education (ISTE), is that of Ribble and Bailey (International Society for Technology in Education, 2007), who defined digital citizenship as the "norms of appropriate, responsible behavior with regard to technology use". Ribble and colleagues (International Society for Technology in Education, 2011; Ribble, 2012; Ribble & Miller, 2013) identified nine areas of digital citizenship: digital etiquette (i.e., netiquette), digital access, digital law, digital communication, digital literacy, digital commerce, digital rights and responsibility, digital safety, and digital health and welfare. According to this conceptualization of digital citizenship, digital citizenship education aims primarily to teach students how to respect and protect themselves and others in online spaces.

Recently, various authors (Heath, 2018; M. Johnson, 2015; Krutka & Carpenter, 2017) have criticized this narrow conceptualization of digital citizenship, arguing that although promoting safety and respectful online behavior are essential aspects of digital citizenship education, they are insufficient to encourage students' active participation in digital spaces and that this conceptualization is not fully aligned with the notion of democratic citizenship. According to them, education should not only make students safe netizens who follow netiquette rules but also prepare them to use digital tools to promote democratic engagement and address social justice issues. In line with this recommendation, his study adopts the perspective of Jones and Mitchell (2016), who suggested that digital citizenship education may focus on fostering two dimensions: respectful online behavior and online civic engagement.

Despite increasing opportunities for civic engagement in the digital age, only a small proportion of young people appear to be politically engaged online (Kahne & Bowyer, 2019; Keating & Melis, 2017; Schulz et al., 2023). Furthermore, the skills and competencies needed to engage in civic and political activities through digital media are unequally distributed among young people, and factors such as gender and class appear to lead to different patterns of online civic engagement (Grasso & Smith, 2022; Grasso & Giugni, 2022; Jones & Mitchell, 2016;van Deursen & van Dijk, 2014). In addition, digital media also exposes young citizens to potential dangers such as hate speech, misinformation, fake news, and echo chambers (Rhodes, 2022). For these reasons, several scholars have argued that pedagogical interventions may be needed to provide young people with equal opportunities to learn the skills and competencies needed to participate safely in online spaces and society (Jenkins, 2009; Kahne et al., 2016; International Society for Technology in Education, 2011; Ribble & Miller, 2013).

1.2 Media education approaches and goals

In the evolving landscape of media education, scholars and practitioners have developed various approaches (Hobbs, 1999; Süss et al., 2008). These approaches typically fall into categories such as protective/preventive, critical, creative/expressive, functional, and civic (see Botturi, 2019), each serving distinct educational goals.

The protective/preventive approach is primarily concerned with safeguarding vulnerable populations, particularly children and teenagers, from the potential risks and harms of media use. This includes risks such as exposure to inappropriate content, cyberbullying, and privacy breaches. Protective media education aims to equip learners with the knowledge and skills to recognize and manage risks effectively. This approach often

highlights the necessity of limiting access to the media. Livingstone (2014), for example, investigated how children navigate risks on social media and discussed the strategy of age boundaries and other measures to ensure children's safety.

The critical approach to media education emphasizes the development of the knowledge and competencies needed to critically analyze media content and the impact of media on society. This involves understanding how digital media work (e.g., algorithms that influence what appears in the feed) and influence behaviors through techniques such as framing and agenda-setting. Educators employing this approach encourage learners to question the power structures and ideological contexts within which media operate, thereby fostering discerning media consumption. The ultimate goal is to cultivate an audience capable of reading beyond surface-level content and recognizing underlying biases and structures of power. Buckingham's (2019) 'The Media Education Manifesto' emphasizes this approach.

The creative-expressive approach (highlighted, for example, in Burn & Durran, 2007) emphasizes using media as a tool for personal and creative expression. It integrates media production into the learning process, allowing students to use different digital tools and platforms to create their own content. This perspective is based on the idea that creating media can help learners to gain a deeper understanding of how media work, while also developing creative and critical thinking skill (Banerjee & Greene, 2006).

The functional media education approach focuses on teaching students practical skills and competencies to effectively use and navigate digital media (Botturi, 2019). The goal is to prepare individuals to operate competently in a media-saturated world, ensuring that they can use tools and technologies responsibly and effectively.

Lastly, the civic approach to media education addresses the role of media in fostering civic engagement and democratic participation (see, for example, Mihailidis & Thevenin, 2013). It underscores the importance of the media in promoting public discourse, political participation, and community mobilization. Through this lens, media education is not just about consumption but also about using media to participate in society. Educators encourage learners to use media platforms to voice their opinions, engage in debates, and mobilize for collective action, thus strengthening democratic processes. This media education approach is often seen as part of digital citizenship education (Choi, 2016; Kahne et al., 2016; Krutka & Carpenter, 2017).

Different media education approaches might also be combined. Each of these approaches offers valuable perspectives on the diverse objectives of media education.

1.3 The relationship between school-based media education practices and young people's online civic engagement and respectful behavior

A large-scale panel study by Kahne and Bowyer (2020) shows that approximately 11% of young people are engaged in online political activities. The study also found that giving students opportunities to learn about producing and distributing digital content can significantly enhance their engagement in online political activities. However, the study neither compared the impact of different types of learning opportunities nor examined other dimensions of digital citizenship, such as students' respectful online behavior (Jones & Mitchell, 2016). The International Civic and Citizenship Education Study (ICCS) (2023) considered students' engagement with political or social issues using digital media (operationalized as interacting with and sharing social media posts) and found that across all participating countries, digital media was seldom used for civic engagement. The ICCS also asked teachers to report the opportunities students had to learn about responsible internet use (e.g., privacy, source reliability, and social media) and to perform different activities with digital media (online research, making presentations, class or work, and online posting to support actions about the environment). However, the relationship between these school-based digital media practices and students' engagement with political or social issues using digital media was not investigated. Furthermore, the study did not examine other dimensions of digital citizenship, and no data were collected in Switzerland.

Studies from other disciplines have examined the relationship between different forms of internet use (e.g., engagement with user-generated content and informational, interactional, and creative use of the internet) and young people's civic and political engagement without considering school-based activities. Östman (2012) found that young people's involvement in user-generated content (i.e., audience experience characterized by expressivity, performance, and collaboration) is positively related to offline and online political participation but negatively related to political knowledge (operationalized as fact knowledge on institutional politics). This study suggests (by adopting the terminology of Bennett et al., 2009) that there might be two different profiles of civic engagement among young people: the 'dutiful' citizens (characterized by high levels of news consumption, informational internet use, and political knowledge) and the 'self-actualizing' citizens (characterized by high engagement in political expressive behavior). Similar results were obtained by Ekström and Östman (2015), who found that informational and interactional internet use is indirectly related to political participation, while creative online engagement (not necessarily in political activities) is a positive predictor of online and offline political participation and a negative predictor of political knowledge (also operationalized here as fact knowledge on institutional politics).

Scholars have raised concerns that young people's engagement in social media and online political activities could detach them from offline and perhaps more effective civic engagement. However, many studies and meta-analyses have proved that this is not the case (Boulianne, 2015; Boulianne & Theocharis, 2020; Schulz et al., 2023). However, these studies and meta-analyses mainly consider cross-sectional design data, leaving unanswered questions about the nature of the relationship (e.g., the direction of causality). A recent meta-analysis of repeated-wave panel studies (Oser & Boulianne, 2020) found evidence of a long-term reinforcing effect (i.e., engaging in political activities increases media consumption and online civic engagement), highlighting the risk of social media use in exacerbating inequalities in political participation rather than mitigating them by mobilising new population groups. Examining the relationship between different school-based media education practices and civic engagement is particularly intriguing in this context. The fact that students' exposure to media literacy education affects students' engagement in online civic activities (Kahne & Bowyer, 2019; Martens & Hobbs, 2015) suggests that schools could potentially mitigate the risks of participatory inequality.

From a theoretical perspective, Gotlieb and Sarge (2021) developed a theoretical model to explain how engagement in user-generated content (UGC) could foster civic readiness among young people. Following this model, the characteristics of involvement in UGC (i.e., expressivity, performativity, and collaboration) provide opportunities for both the development of civic skills (i.e., communication, organization, and collective decision-making) and the satisfaction of self-determination needs (Deci & Ryan, 1985; Ryan & Deci, 2017), which in turn lead to sustained intrinsic civic motivation. The authors suggest that this model offers practical insights for designing interventions for nurturing active, long-term civic involvement among the youth and that integrating media literacy education emphasizing UGC could even empower resource-poor and marginalized youth. This approach would prepare them for unconventional and conventional political participation, helping them perceive their involvement as self-driven rather than obligatory.

Many intervention studies have investigated the impact of school-based educational interventions on preventing cyberbullying and promoting respectful online behavior. A systematic review (Hutson et al., 2018) found that interventions based on communication and social skills, empathy training, coping skills, and digital citizenship (conceptualized in terms of responsible and respectful online behavior) were effective. Few large-scale survey studies have analyzed these issues. A survey study by Park et al. (2014) found that the more students use the internet and social media, the more likely they are to experience online bullying, victimization, and witnessing. However, the study did not consider the impact of school-based activities. To the author's knowledge, no study has examined how different media education practices are related to respectful online behavior.

1.4 Research questions

Given the lack of large-scale studies on the relationship between different types of school media education practices and students' online digital citizenship practices, as well as the lack of data on the current situation in Switzerland, this study addresses the following research questions:

a) What kind of school-based media education practices do students encounter in Swiss upper secondary schools?
b) How do different types of media education practices at school predict students' online civic engagement and respectful behavior by considering relevant students' background variables?

2. Methodology

2.1 Context

In the Swiss educational landscape, post-compulsory education encompasses roughly two-thirds of students pursuing vocational training, which typically combines on-the-job training with school-based education. The remaining third enrolls in general or specialized baccalaureate programs that are exclusively school-based (Bundesamt für Statistik, 2024). Students who participated in PISA 2022 reported using digital media at school between one and two hours a day, which is well below the OECD average (OECD, 2023). The curricula in both vocational and general baccalaureate programs commonly underline the importance of enhancing students' computer and information literacy, recognizing them as a critical cross-disciplinary objective. Many curricula also incorporate computer science as a distinct academic subject (EDK, 2017). In compulsory education curricula, special attention is also given to promoting students' active civic participation as an objective of general education or education for sustainable development (Ciip, 2011; D-EDK, 2014). In most cases, these objectives are also included in the curricula of upper secondary schools, although they are sometimes vaguely formulated, and most of them show didactical shortcomings (Waldis & Ziegler, 2019).

Switzerland's political system is a paradigm of semi-direct democracy. Unlike representative democracies, where elected officials alone make decisions on behalf of their constituents, Swiss semi-direct democracy allows individuals to have a more direct impact on laws and policies through referendums and popular initiatives. This system requires citizens to vote on various issues several times per year. Despite these possibilities, young people in Switzerland participate much less in voting than older generations (Wittwer, 2015). According to a national study on student political participation (gfs.bern, 2018), around 30% of young people aged 15-25 declared that they were very likely to engage in online political activities (such as sharing political content on social media or following politicians on social media). Another study found that 22.1% of Swiss young adults aged 18-38 (women 17.8%, men 27.8%) discuss or exchange opinions about politics on social media sites, and 12.6% of them (women 9%, men 17.4%) have joined or created a political group on social media (Grasso & Smith, 2022). These results show that online political engagement is moderately widespread among Swiss adolescents and that gender influences it, but nothing is known about the relationship between school activities and the development of this type of engagement.

2.2 Sample

This research draws on data from a comprehensive national survey investigating the digital transformation of upper secondary schools in Switzerland (Petko et al, 2022; Antonietti et al. 2023). Data were collected anonymously and on a voluntary basis through an online questionnaire conducted in two phases: between September and November 2021 in the canton of Zurich, and then between May and July 2022 in other cantons. Participation was sought from all upper secondary schools in Switzerland through email invitations sent to school administrators, who then distributed the survey to their students in the penultimate school year.

Approximately 20% of the targeted schools participated in the study. During the survey period, face-to-face classes were held normally in Switzerland without pandemic-related restrictions on classroom activities.

The sample used in this study consisted of 8,915 students in the penultimate school year of upper secondary school (mean age = 18.15 years, SD = 3.62; median = 17; modus = 17; 48.3% male, 48.3% female, 3.5% other/non-binary) from 108 schools. Of these participants, 56.1% were enrolled in vocational programs, 37% in general baccalaureate programs, and 6.9% in specialized baccalaureate schools. The sample consisted predominantly of students from the German-speaking region of Switzerland (80.1%), followed by those from the French-speaking (11.4%) and Italian-speaking (8.5%) regions of Switzerland, reflecting a slight underrepresentation of vocational students and French-speaking students in relation to the national population.

In the data cleaning and processing phase, responses were excluded based on the following criteria: time to complete (less than two standard deviations from the mean), incorrect school code entries, and non-second-year status.

2.3 Measures

2.3.1 Frequency of computer use at school

To assess the frequency of computer use at school, students were asked how often they used computers or tablets for learning purposes at school. The questions were based on a questionnaire from the European Commission (2019). A five-point Likert scale for responses, ranging from 1 (‘never or almost never’) to 5 (‘several times a day’), was employed. Recognizing that the students were unlikely to use both a tablet and a computer regularly, a new composite variable was created. This variable captured the higher frequency of use between the two devices (tablet or computer) for each student. This composite variable was used in the analyses.

2.3.2 Media activities at school

The questionnaire developed for the national study asked students how often they used digital technologies to engage in 29 activities. This study specifically examines activities that can foster the development of *digital engagement literacy*, as termed by Kahne and Bowyer (2019). These activities can also be called ‘engagement with user-generated content’ and are characterized by being expressive, performative, and collaborative (Gotlieb & Sarge, 2021; Östman, 2012). Specifically, we selected items that asked students how often they had the opportunity to use social media, develop and design online content, create video or audio productions, collaborate online with other learners, and publish their work on the internet at school. Although these activities are not political in nature, there is empirical evidence that they can promote learners’ civic engagement both online and offline (Östman, 2012). The answer option for the items was a five-point Likert scale ranging from 1 (‘never ‘) to 5 (‘very often ‘).

2.3.3 Media education topics addressed at school

As it is crucial to teach not only how to use digital technologies (for learning and other purposes) but also how they work (Guggemos & Seufert, 2021; Schmitz et al., 2024) and the impact they have on society (Brinda et al., 2020), the survey asked students whether they had the opportunity to address the following topics at school: the impact of digital technologies on the economy and work, the impact of digital technologies on democracy, the impact of digital technologies on the environment, the impact of digital technologies on health (physical and mental), the impact of digital technologies on social relationships (friendships, family, etc.), the reliability of online information, the dangers of the internet (e.g., scams, data security). The response options were dichotomous (yes/no).

2.3.4 Online civic engagement

To investigate students’ online civic engagement, this study developed a short scale inspired by the Internet Political Activism sub-scale developed by Choi et al. (2017) and Jones and Mitchell’s (2016) Online Civic Engagement sub-scale. The short scale inquired whether the students (1) had used the internet to make a difference on a political or social level, (2) participate in online groups that engage with political or social

issues, or (3) regularly publish posts on political or social issues on the internet. Responses were measured on a five-point Likert scale, ranging from 1 ('completely disagree') to 5 ('completely agree'). Both exploratory and confirmatory factor analyses confirmed the unidimensionality of the scale. The scale demonstrated a Cronbach's alpha of 0.794, indicating a good internal consistency. The three variables measured by the scale were combined into a single average score variable for additional analysis.

2.3.5 Respectful online behavior

Students' engagement in respectful online behavior was assessed using a short scale inspired by Jones and Mitchell's (2016) Internet Online Respect sub-scale. The scale asked students whether they (1) made sure that the pictures they posted or shared of other people would not embarrass them or get them into trouble, (2) made sure that they would not later regret the things they said and posted online, and (3) participated in offending arguments and interactions online. Responses were measured on a five-point Likert scale, ranging from 1 ('completely disagree') to 5 ('completely agree'). Both exploratory and confirmatory factor analyses provided empirical evidence for the scale's unidimensionality. The scale showed a Cronbach's alpha of 0.834, indicating an excellent internal consistency. The three aspects of the scale were combined into a single mean score variable for further analysis.

2.3.6 Students 'background variables

This study considered the following background variables (for an overview of the relationship between young people's background variables and their civic engagement, see Schulz et al., 2023):

a) *Gender*: Students were asked to identify their gender as male, female, or other. This variable was subsequently transformed into two dummy variables.
b) *Language spoken at home*: Students were asked about the primary language they spoke at home. This variable was recoded dichotomously, where '1' indicates a Swiss national language and '0' represents any other language.
c) *Type of schooling*: The analysis differentiated between students attending a full-time school program (specialized and general baccalaureate schools), who received code '0', and students involved in a vocational education and training program, who received code '1'.
d) *Parental education level*: The education levels of the students' mothers and fathers were considered ("low", "middle" or "high"). This variable was transformed into two dummy variables.
e) *Language region of the attended school*: The three national language regions represented in the sample (German-speaking, French-speaking, and Italian-speaking) were considered. This variable was transformed into two dummy variables.

2.4 Descriptive statistics

A simple weighting procedure was applied to the data to correct over-representation and under-representation of certain sub-populations in the sample and thus make the data more representative. The weighting procedure was performed with SPSS 26 and considered school type (vocational, general baccalaureate, and specialized baccalaureate) and language region (German-speaking part, French-speaking part, and Italian-speaking part). The weights were not applied to further multilevel multiple-regression analysis, as unweighted estimates are considered more unbiased and consistent (Winship & Radbill, 1994).

2.5 Hierarchical multilevel multiple regression analysis

Recognizing the nested structure of the data (Schielzeth & Nakagawa, 2013), with students grouped within schools, this study employed a hierarchical multilevel multiple regression approach with random intercepts for schools. As it was not possible to take the class level into account in the study, and given that the values reported in school-based digital media practices might be influenced by (a) students' affiliation to different schools, (b) different study programs, (c) different classes, and (d) individual preferences and perceptions, the study utilizes a grand-mean-centering approach, which allows for a simultaneous investigation

of contextual and individual effects without modeling them separately (Enders & Tofighi, 2007; Paccagnella, 2006; Wu & Wooldridge, 2005). Compared to a simple multiple regression approach, this approach allows the intercepts to vary between schools and estimates the percentage of variation due to students' different school affiliations.

Residual normality was assessed using two graphical diagnostic approaches: inspection of quantile-quantile (Q-Q) plots and residual histograms. Observations with standardized residuals greater than three standard deviations from the mean were excluded. In concrete, 32 observations in the multilevel regression analysis with online civic engagement as the output variable and 84 observations in the analysis with engagement in respectful online behavior as the output variable were excluded.

The analysis was conducted utilizing R and jamovi (The jamovi project, 2022; R Core Team, 2021). The following R packages and jamovi modules were used for the analysis: *psych* (Revelle, 2019), *car* (Fox & Weisberg, 2020) and *GAMLj* (Gallucci, 2019). Missing data were handled by the default listwise exclusion method embedded within the software, and three schools with fewer than five participants were excluded from the sample.

The marginal R^2 provided an estimate of the variance explained by the fixed factors alone, while the conditional R^2 offered insight into the total variance explained by both fixed and random factors (Nakagawa & Schielzeth, 2013). A likelihood radio model testing was also performed to assess whether the more complex models fit the data significantly better than the simpler one (Peugh, 2010). For each dependent variable (online civic engagement and respectful online behavior), three models were constructed:

1. Null Model (Model 0): This baseline model, without any predictors, aimed to partition the variance in the dependent variable into within-group (individual-level) and between-group (school-level) components. It provides a reference point for assessing the variance explained by subsequent models.
2. Background Variables Model (Model 1): Incorporating only background variables (gender identity, language spoken at home, type of schooling, parental education level, and language region), this model assessed the influence of these factors on the dependent variables.
3. Full Model (Model 2): This full model, which includes the background and school digital media practices variables, was designed to measure the predictive impact of all independent variables on online civic engagement and respectful online behavior.

The comparison of R^2 values between Model 1 and Model 2 revealed the additional variance in dependent variables explained by the media school-based activities variables alone.

3. Results

3.1 Descriptive statistics

The descriptive statistics (Table 1) of the main variables used in this study showed that the frequency of computer use had a mean of 3.74 (SD = 1.31) on a 5-point Likert scale, indicating a moderate to high level of computer use in class. Despite this high level of computer use, the data showed that students engaged in only a few media activities that had the potential to promote *digital engagement literacy*. Using social media was the most frequently performed activity, with a mean of 3.11 (SD = 1.55). This was followed by online collaboration (M = 2.5; SD = 1.38). However, the standard deviation of these variables suggests a wide range of responses, which indicated that these activities had not yet been implemented homogeneously in schools. All other media activities had low mean scores and lower standard deviations, suggesting that they were rarely carried out and that the students' responses were more consistent. Publishing one's own work online had the lowest mean of 1.62 (SD = 1.05), reflecting the very limited opportunity for students to engage in this activity at school. Creating a video or audio production had a mean of 1.81 (SD = 1.08), and developing and designing online content had a mean of 1.91 (SD = 1.2).

Table 1 also displays the percentages of students who had studied a particular media education topic at school. These variables were categorical, with responses indicating either the presence or absence of the topic in their education; thus, no mean or standard deviation was reported. The most frequently discussed topic at school was the dangers of the internet (65.5% yes). The second most frequently discussed topic was the reliability of online information (55.5% yes).

The correlation between the two dependent variables was also calculated and showed a negative and significant, albeit weak, correlation with each other ($r = -0.1$, $p < .001$).

Table 1

Descriptive Statistics of Predictors and Dependent Variables Computed with Weighted Data.

	N	M	SEM	SD	Min	Max	Yes	No	α
Media activities at school									
Frequency of computer use	8915	3.74	0.001	1.312	1	5			
Publishing own work online	8915	1.62	0.001	1.049	1	5			
Collaborating online	8915	2.50	0.001	1.380	1	5			
Developing and designing online content	8915	1.91	0.001	1.199	1	5			
Using social media	8915	3.11	0.002	1.554	1	5			
Creating a video or audio production	8915	1.81	0.001	1.079	1	5			
Media education topics addressed at school	8915								
Impact on economics and work	8915						34.9%	65.1%	
Impact on democracy	8915						15.1%	84.9%	
Impact on the environment	8915						38.1%	61.9%	
Impact on health (physical and mental)	8915						41.8%	58.2%	
Impact on social relationships	8915						39.9%	60.1%	
Reliability of online information	8915						55.5%	44.5%	
Dangers of the Internet (e.g. data security)	8915						65.5%	34.5%	
Online civic engagement	8915	2.05	0.001	1.112	1	5			0.794
Respectful online behavior	8915	4.16	0.001	0.973	1	5			0.834

Note. M = Mean, SEM = Standard Error of mean, SD = Standard Deviation, Min = Minimum, Max = Maximum, α = Cronbach's Alpha

3.2 Multilevel multiple regression analysis: Prediction of online civic engagement

Table 2 displays the model fits and estimates of all three models. Model 0 served as a baseline, including only random intercepts without fixed effects. It yielded a marginal R^2 of 0 and a conditional R^2 of 0.009, indicating minimal explained variance. The low intra-class correlation (ICC) of 0.009 indicates that only 0.9% of the variance in online civic engagement is due to school-level factors.

Model 1 introduced the students' background variables. This model showed a significant improvement over the baseline, with a χ^2 of 144.266 ($df = 10$, $p < .001$), suggesting that the added predictors significantly improved the model fit. The marginal R^2 increased to 0.025, and the conditional R^2 to 0.028. The decrease in AIC and BIC also indicated a better model fit than Model 0.

Model 2 extended Model 1 by adding two predictors: the media activities students had the opportunity to perform at school and the media education topics they addressed at school. This model explained significantly more variance than Model 1, with a χ^2 of 423.888 ($df = 13$, $p < .001$). The model's marginal R^2 was 0.090, and the conditional R^2 was 0.095, suggesting that Model 2 explained approximately 9.5% of the variance in online civic engagement. The lowest AIC and BIC also indicated that including these predictors enhanced the model's fit.

In terms of fixed effects, identifying as 'female' (compared to students identifying as male) and attending general education (compared to students attending vocational education) were significantly associated with lower levels of online civic engagement ($\beta = 0.083$, $SE = 0.028$, $p < .01$; $\beta = -0.155$, $SE = 0.038$, $p < .001$), while identifying as 'other'/'non-binary' and higher maternal education were associated with higher estimates ($\beta = 0.544$, $SE = 0.075$, $p < .001$; $\beta = 0.126$, $SE = 0.039$, $p < .001$).

Regarding the school-based media activity variables, the results showed that the simple frequency of computer use in class was not significantly associated with online civic engagement. By contrast, all other media activities aligned with a creative or expressive media education approach were positively and significantly associated with higher levels of internet political activism. Among the media education topics addressed at school, the impact of digital technologies on democracy stood out with a substantial positive effect ($\beta = 0.168$, SE = 0.039, $p < .001$). The impact on the environment also showed a significant positive relationship ($\beta = 0.080$, SE = 0.032, $p < .05$). Other topics did not show significant associations with online civic engagement.

Graphical analysis of the residual histogram and the Q-Q plot suggested that the residuals were approximately normally distributed. Although deviations from a normal distribution of residuals should not have a large impact in larger samples (Bohrnstedt & Carter, 1971; Schmidt & Finan, 2018; Vasu & Elmore, 1975), some caution is still required when interpreting the results.

Table 2

Model Fit and Model Estimates for the Multilevel Analysis with Online Civic Engagement as the Dependent Variable

		Model 0		Model 1		Model 2	
		Estimate	SE	Estimate	SE	Estimate	SE
Model Fit							
	AIC	18428.1		18303.8		17904	
	BIC	18454.4		18443.6		18209.8	
	LogLikel.	-9214.1		-9165.1		-8991.5	
	R-squared Marginal	0		0.025		0.090	
	R-squared Conditional	0.010		0.030		0.096	
	N. par	2		12		25	
	χ^2			98.039		347.221	
	df			10		13	
	p			<.001		<.001	
	Reference			Model 0		Model 1	
Random Components							
(Intercept)							
	SD	0.106		0.078		0.087	
	σ	0.011		0.006		0.00757	
	ICC	0.010					
Fixed Effects							
(Intercept)		2.02 ***	0.019	2.120 ***	0.042	2.116 ***	0.046
Gender							
	Female			-0.078 **	0.028	-0.083 **	0.028
	Other			0.525 ***	0.077	0.538 ***	0.075
Language at home							
	National language			-0.116 ***	0.034	-0.049	0.033
Schooling type							
	General education			-0.182 ***	0.035	-0.155 ***	0.036
Education mother							
	Middle			0.075	0.041	0.064	0.040
	Higher			0.155 ***	0.040	0.128 ***	0.039
Education father							
	Middle			-0.049	0.043	-0.079	0.042
	Higher			0.054	0.040	0.017	0.039
Language region							
	French			0.087	0.053	0.078	0.056
	Italian			-0.053	0.061	-0.011	0.063
Media activities at school							
	Frequency of computer use					-0.018	0.011
	Publishing own work online					0.113 ***	0.014
	Collaborating online					0.032 **	0.012
	Developing and designing online content					0.079 ***	0.013
	Using social media					0.044 ***	0.009
	Creating a video or audio production					0.090 ***	0.014
Media education topics addressed at school							
	Impact on economics and work					0.016	0.031
	Impact on democracy					0.168 ***	0.039
	Impact on the environment					0.080 *	0.032
	Impact on health (physical and mental)					0.006	0.032
	Impact on social relationships					-0.040	0.032
	Reliability of online information					-0.053	0.031
	Dangers of the Internet					-0.057	0.031

Note. N = 6160, groups: schoolcode. * p < .05, ** p < .01, *** p < .001

3.3 Multilevel multiple regression analysis: Prediction of respectful online behavior

Table 3 presents the model fits and estimates derived from the multilevel analysis. Model 0, which included only the random intercepts, provided a baseline for comparison with more complex models. In this initial model, ICC suggested that 3.0% of the variance in respectful online behavior could be attributed to school-level factors. The marginal R^2 of 0 and the conditional R^2 of 0.03 indicate that the model explained none or minimal variance in the dependent variable.

In Model 1, which incorporated students' backgrounds, a substantial improvement in model fit was observed, as evidenced by a decrease in the AIC and BIC, and an increase in marginal (0.103) and conditional (0.111) R^2 values. This model also significantly deviated from the null model ($\chi^2 = 593.992$, df = 10, $p < .001$).

Model 2 further expanded upon Model 1 by including school-based media education practices. This final model showed the best fit with the lowest AIC and BIC values and an increase in explained variance, with marginal R^2 at 0.121 and conditional R^2 at 0.127. Model 2 significantly deviated from Model 1 ($\chi^2 = 119.368$, df = 12, $p < .001$). Despite the significant deviation, it is interesting to note in this case that the added variance of Model 2 (compared to Model 1) is much smaller than in the case of civic online engagement.

In terms of fixed effects, gender differences were significant, with students identifying as 'female' showing a significant positive association ($\beta = 0.412$, $p < .001$) and students identifying as 'other'/'non-binary' showing a negative association ($\beta = -0.505$, $p < .001$) with respectful online behavior (compared to students identifying as 'male'). Speaking one of the three national languages at home was positively associated with the outcome ($\beta = 0.131$, $p < .001$) compared to speaking another language, as was attending a general education type of school ($\beta = 0.127$, $p < .001$) compared to attending a vocational school.

Interestingly, media activities at school had mixed effects. The increased frequency of general computer use at school and collaborating online during lessons was positively and significantly correlated with respectful online behavior ($\beta = 0.063$, $p < .001$; $\beta = 0.024$, $p < .05$), while having the possibility to use social media ($\beta = -0.047$, $p < .001$), create videos or audio productions ($\beta = -0.045$, $p < .05$), and publish one's own work online ($\beta = -0.041$, $p < .05$) were negatively and significantly associated.

Finally, among the media education topics addressed at school, the 'dangers of the internet' had a significant positive impact on respectful online behavior ($\beta = 0.111$, $p < .001$). Similarly, the 'reliability of online information' was associated with a positive outcome ($\beta = 0.070$, $p < .01$).

An examination of the residual histogram and the Q-Q plot indicated slight leptokurtosis and some minor asymmetries. Despite these minor deviations, the residuals largely conform to normality, which is generally acceptable in large-sample statistical analyses (Bohrnstedt & Carter, 1971; Schmidt & Finan, 2018; Vasu & Elmore, 1975). However, interpreting these results also requires caution.

Table 3

Model Fit and Model Estimates for the Multilevel Analysis with Respectful Online Behavior as the Dependent Variable.

	Model 0		Model 1		Model 2	
	Estimate	SE	Estimate	SE	Estimate	SE
Model Fit						
AIC	15359.202		14785.2		14691.8	
BIC	15379.35		14872.5		14866.5	
LogLikel.	-7676.601		-7379.6		-7319.9	
R-squared Marginal	0		0.103		0.121	
R-squared Conditional	0.030		0.111		0.127	
N. par	2		12		25	
χ^2			593.992		119.368	
df			10		13	
p			<.001		<.001	
Reference			Model 0		Model1	
Random Components						
(Intercept)						
SD	0.147		0.076		0.004	
σ	0.217		0.006		0.007	
ICC	0.030					
Fixed Effects						
(Intercept)	4.29 ***	0.020	3.946 ***	0.033	3.970 ***	0.033
Gender						
Female			0.409 ***	0.022	0.412 ***	0.022
Other			-0.527 ***	0.059	-0.505 ***	0.059
Language at home						
National language			0.148 ***	0.026	0.131 ***	0.026
Schooling type						
General education			0.145 ***	0.029	0.127 ***	0.028
Education mother						
Middle			-0.038	0.032	-0.035	0.031
Higher			-0.049	0.030	-0.046	0.030
Education father						
Middle			-0.020	0.033	-0.030	0.033
Higher			-0.017	0.031	-0.027	0.031
Language region						
French			-0.007	0.044	-0.024	0.043
Italian			-0.052	0.049	-0.046	0.048
Media activities at school						
Frequency of computer use					0.063 ***	0.034
Publishing own work online					-0.041 *	0.015
Collaborating online					0.024 *	0.009
Developing and designing online content					-0.006	0.014
Using social media					-0.047 ***	0.007
Creating a video or audio production					-0.045 *	0.015
Media education topics addressed at school						
Impact on economics and work					0.007	0.024
Impact on democracy					-0.049	0.030
Impact on the environment					0.043	0.025
Impact on health (physical and mental)					0.015	0.025
Impact on social relationships					0.017	0.025
Reliability of online information					0.070 **	0.024
Dangers of the Internet					0.111 ***	0.024

Note. N = 6108, groups: schoolcode. * p < .05, ** p < .01, *** p < .001

4. Limitations

There are a number of limitations to this study. Although the sample size is large and several measures have been taken to ensure a reasonable degree of representativeness of the data, the data do not perfectly represent the demographic landscape, background variables were missing many entries, and self-selection mechanisms in data collection could not be excluded entirely. Caution should, therefore, be exercised in generalizing these results. Furthermore, when looking at other countries, it is crucial to recognize that differences in political context and education systems may affect the results.

The cross-sectional design of this study limited the inference of causality from the relationships examined. Although it is reasonable to assume that students have limited influence over the curricula and the proposed classroom activities, it is crucial to consider that participatory teaching styles may encourage student-initiated discussions and activities in certain situations. Nonetheless, Kahne and Bowyer's (2019) longitudinal study provided some initial empirical evidence that digital media activities in schools influence students' online civic engagement. Future research should further explore the nature of this relationship.

Moreover, this study did not account for several critical variables considered key predictors of (online) civic engagement and respectful behavior, such as political interest and parents' level of activism (as done, for example, by Ekström & Östman, 2015; Kahne & Bowyer, 2019; Östman, 2012). Future studies should also consider these variables to obtain more accurate and detailed insights into the mechanisms that lead young people to develop their (online) civic or political engagement. Furthermore, due to the different organizational structures in the schools, it was not possible to collect data regarding the class level. This limitation prevented the inclusion of the class level in the multilevel multiple regression analysis, which could have provided more profound insights into the relationships examined. Data reliability is another concern in this study, as self-reported measures potentially subject to social desirability bias were employed, particularly regarding the assessment of online respectful behavior.

Furthermore, only a few items were used to measure online civic engagement and respectful behavior. The focus on highly active forms of civic engagement, such as content creation, might exclude other less active but still relevant aspects of online civic engagement, such as simply liking or sharing political posts, which were, for example, considered in the ICCS (Schulz et al., 2023). Studies with more detailed or differently focused operationalizations of online engagement and respectful behavior might yield different conclusions.

Moreover, the methodology employed in this study limited the capacity to draw significant conclusions about the qualities of the studied activities and behaviors. Future qualitative or mixed-methods studies could, for example, explore the concrete activities engaged in by students in their civic engagement (Soep, 2014) and whether respectful behavior is based on students' deep-seated ethical beliefs or is simply a matter of blind obedience and adherence to digital etiquette norms.

Another shortcoming of this study is that the operationalization of online civic engagement focuses only on expressive activities, such as publishing posts. Scholars have pointed out that it is crucial to consider activities such as conscientiously boycotting specific platforms as negative forms of online civic engagement (Casemajor et al., 2015; Krutka et al., 2021; Lutz & Hoffmann, 2017). Future studies could also consider these forms of online civic engagement.

Despite these limitations, the strengths of the study include its high ecological validity, having collected data from everyday real-world settings, and its large sample size. This study is also unique in comparing a wide variety of school-based digital media practices and considering two different output variables.

5. Discussions

The study shows that Swiss upper secondary schools put little emphasis on media education and digital citizenship education. Although the average use of computers in class ranged from moderate to high, the students encountered few activities aligned with a creative-expressive approach to media education that would allow them to develop their digital engagement literacy and, consequently, their online civic engagement (Ekström & Östman, 2015; Gotlieb & Sarge, 2021; Kahne & Bowyer, 2019). These findings are consistent with those of Antonietti et al. (2023; 2024), who found that digital media in Swiss upper secondary schools are mainly used to support teacher-centred, transmissive teaching styles rather than constructivist, student-centred approaches, where students are encouraged to actively construct their knowledge or work on creative and collaborative projects. The limited prevalence of these activities represents a missed opportunity to promote online (civic) engagement and engaging learning opportunities for young people.

Regarding the media education topics addressed in school, our findings reveal that topics related to a protective/preventive media education approach (i.e., the dangers of the internet) are the most prevalent in Swiss upper secondary schools, followed by topics related to a critical approach (i.e., teaching students to evaluate the reliability of online information). However, although these activities and approaches are widespread, many students still do not encounter these topics. For example, 44.5% of students reported that they did not address the topic of online information reliability; this proportion of students is highly problematic, considering the importance of media in shaping public opinion and given the higher rate of "news deprivation" (i.e., the underconsumption of professionally produced news in line with quality standards) among young people in Switzerland (Eisenegger & Vogler, 2022). Additionally, the results show that addressing the impact of digital technologies on democracy, the economy, and the environment is uncommon in upper secondary schools. Notably, the impact of digital technologies on democracy, a topic that aligns with a critical or civic media education approach, was encountered by only a minority of students (15.6%). These findings are concerning, as they indicate that civic education, if students experience it, does not adequately consider developments related to digital technologies, and that media education, if students experience it, does not consider the political impact of digital technologies. Interestingly, Schmitz et al. (2024) found that teachers reported addressing media education topics on class much more frequently than what was perceived by students. These findings underline the importance of considering the students' perspective and may suggest that teachers only address these topics in some classes. It is also important to note that the high standard deviations of the media education activity variables indicated that the students' responses varied widely. These results may be due to the fact that in Swiss upper secondary schools, both media education and civic education are mostly considered cross-curricular areas that should be integrated into all subjects, but whose concrete implementation is often treated very vaguely in the curricula and thus left to the initiative of individual teachers (Waldis & Ziegler, 2019).

Regarding the prediction of online civic engagement, the analysis revealed that only 0.9% of the variance in online civic engagement is attributable to school-level differences, suggesting that the vast majority of the variance (99.1%) is due to factors within schools (e.g., class-level factors and teacher variables) or other variables not considered by Model 0. This suggests that schools did not significantly promote online civic engagement at the institutional level. If students have the opportunity to experience digital citizenship education, it is likely to occur through the initiative of individual teachers or the students themselves.

Gender and school type emerged as significant predictors of online civic engagement. Identifying as 'female' and attending general or specialized baccalaureate education were associated with lower levels of online civic engagement, whereas identifying as 'other'/'non-binary' and higher maternal education correlated with higher levels. The greater online civic engagement among vocational students may suggest that these programs' more practical and hands-on orientation could promote a more 'actualizing' form of civic engagement (Bennett et al., 2009). By contrast, general and specialized baccalaureate programs prepare students for higher education and for assuming societal responsibilities and may, therefore, promote a more 'dutiful' form of civic engagement (Bennett et al., 2009). The increased online engagement of students who identify as 'other'/'non-binary' may reflect their use of online platforms to explore and express their identity,

to connect with and seek support from the LGBTQIA+ community, and to advocate for their rights (Fisher et al., 2024; McConnell et al., 2017). The fact that students who identified as female tended to be less politically engaged online than male students resonates with the findings of several other studies (Grasso & Smith, 2022; Östman, 2012; Schulz et al., 2023). These findings—as well as scholarly work on gender and digital citizenship—highlight the importance of adopting gender-sensitive digital citizenship education strategies (Heath, 2018; Henry et al., 2022; M. Johnson, 2015).

Regarding media activities in classrooms, the general frequency of computer use at school showed no significant association with civic engagement, contrary to creative and expressive media practices (e.g., publishing work online, online collaboration, and developing online content), which significantly and positively predicted online civic engagement. These results align with those of Khane and Bowyer (2019) and the theoretical insights by Gottlieb and Segre (2021), underscoring the importance of engaging students in user-generated content to foster their (online) civic engagement.

The results of this study also highlight both opportunities and challenges of online civic engagement: On the one hand, digital participation seems to be an opportunity for some minorities (e.g., students who identify with the gender "other"); on the other hand, the results show that inequalities in the real world (e.g., the impact of gender and mother's educational level) are also reflected in these digital environments (Grasso & Smith, 2022; Grasso & Giugni, 2022; van Deursen & van Dijk, 2014).

Regarding the prediction of respectful online behavior, the ICC indicated that 3% of the variance in respectful online behavior could be attributed to differences between schools, although the specific contributing factors remain unclear. This explained variance might be influenced partly by the composition of the student body, such as gender proportions and other demographic characteristics. Further investigations are needed to understand how school-level dynamics influence students' online behavior.

Gender again played a significant role in respectful online behavior, with females exhibiting more respect. This finding is consistent with prior research (Jones & Mitchell, 2016) suggesting that socialization processes influence online behaviors. Females showed significantly more respectful behavior online compared to males. By contrast, students identifying as 'other'/'non-binary' tended to exhibit less respectful behavior, possibly due to higher exposure to online conflicts, such as cyberbullying or hate speech (McConnell et al., 2017) and, consequently, a higher possibility of becoming involved in these conflicts (Walrave & Heirman, 2011). Concerning young women and respectful behavior, scholars (Heath, 2018; M. Johnson, 2015) have highlighted how digital citizenship education, which focuses primarily on respectful behavior and safety rather than empowerment and justice-oriented participation, may perpetuate gender stereotypes and inequalities. The norms around 'appropriate' and 'responsible' online behavior may inadvertently silence women and girls, who are often socialized to be non-confrontational and seen as more vulnerable and in need of protection than young men. This could limit their (online) civic engagement, thus reinforcing existing gender dynamics and potentially exacerbating digital inequities. Both studies (Heath, 2018; M. Johnson, 2015) emphasized the need for digital citizenship frameworks and education approaches that encourage critical thinking, inclusivity, empowerment, and active justice-oriented participation.

Speaking one of the national languages at home and attending a general or specialized baccalaureate type of school, compared to not speaking a national language at home and attending a vocational school, showed a positive association with respectful online behavior. These results point to the complex interplay between the educational environment, socio-economic background, and possible experiences of discrimination or racism that could influence online interaction. Future studies on these aspects are needed to obtain more interpretable results.

The results also highlighted that various media activities affect online respectful behavior differently. While the frequency of computer use and online collaboration were positively and significantly associated with respectful behavior, creative and expressive activities (e.g., using social media and creating videos) significantly and negatively predicted its variance. Again, it can be hypothesized that students who use social

media more frequently and who are given the opportunity to express themselves online through digital creations are more likely to encounter harm, discrimination, and hate speech (Livingstone & Smith, 2014; McConnell et al., 2017; Park et al., 2014) and, therefore, more likely to become involved in it (Walrave & Heirman, 2011). To address this issue, teachers and practitioners could, for example, address the topic of hate speech in their lessons and teach strategies to counter and reduce hate speech effectively through empathy-based counterspeech (Hangartner et al., 2021). To sustainably promote respectful behavior, approaches addressing values such as respect, tolerance, openness, empathy, curiosity, and non-violence are crucial (Berkowitz & Bier, 2004; 2014; Kundu, 2021; Nucci, 2001). The positive and meaningful relationship between collaborative online activities and online behavior is noteworthy and suggests, in line with findings from other studies, that collaborative activities can be an opportunity to promote cooperative, pro-social, and respectful behavior (D. W. Johnson & Johnson, 2009).

The results also highlight the importance of educational content that addresses 'dangers of the internet' and 'reliability of online information', which significantly and positively predicted some variance in respectful online behavior. This suggests that increased awareness of online risks and a deeper understanding of media content and mechanisms can lead to more thoughtful online engagement. However, as highlighted by Livingstone (2014), it is also important to consider the opportunities that young people encounter online. In digital spaces, as in the real world, opportunities and risks often go hand in hand.

Overall, the findings of this study highlight the challenges that teachers and practitioners face in promoting online civic engagement and respectful behavior among students. While media-based expressive activities are essential for promoting students' engagement in online (civic) activities, they can lead to disrespectful interactions if not properly facilitated. At the same time, a protective approach to media education that focuses on online dangers and risks seems to promote respectful online behavior among students but may also prevent them from becoming highly engaged online. Therefore, researchers, teachers, policymakers, and practitioners are challenged to find approaches that simultaneously promote respectful behavior and civic engagement online. Furthermore, the fact that the additional variance explained by Model 2 is greater in the prediction of online civic engagement and that the variance explained by background variables is greater in the prediction of respectful online behavior suggests that school-based media education practices are more likely to have an impact on civic engagement than on respectful behavior.

Finally, the findings stimulate reflection on the concept of digital citizenship, highlighting its normative rather than empirical nature. The observed negative correlation between online civic engagement and respectful online behavior may be due to different profiles among young people, with some being more respectful but less engaged, while others are more engaged but less respectful (similar to what was theorized by Bennett et al., 2009). Future studies should aim to empirically identify these different profiles of digital citizenship and explore interventions that can balance respect and engagement in digital spaces.

By considering different types of media education activities as predictors (simple frequency of computer use, different digital media activities that have the potential to promote online engagement, and media education topics covered at school) and two dimensions of digital citizenship as outcome variables (online civic engagement and respectful behaviour), this study contributes to the existing body of research on this topic (Kahne & Bowyer, 2019; Schulz et al., 2023) by providing a more nuanced perspective on the complex mechanisms underlying young people's development of digital citizenship. In particular, it provides valuable insights into the challenges faced by practitioners in promoting digital citizenship in schools.

Keypoints

- Swiss upper secondary schools place little emphasis on digital citizenship education
- Current media education practices focus primarily on protective or critical media education approaches
- Creative school-based digital media activities predict online civic engagement but not respectful behavior
- Addressing topics such as 'dangers of the Internet' at school predicts respectful online behavior but not online civic engagement.
- Online civic engagement and respectful online behavior are negatively correlated
- Gender, language spoken at home, type of schooling and parental education significantly affect students' digital citizenship practices

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