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# *Bridging the gap? The impact of a media literacy educational intervention on news media literacy, political knowledge, political efficacy among lower-educated youth*

Sabine Geers

*Amsterdam School of Communication Research, University of Amsterdam, Netherlands*

Mark Boukes

*Amsterdam School of Communication Research, University of Amsterdam, Netherlands*

Judith Moeller

*Amsterdam School of Communication Research, University of Amsterdam, Netherlands*

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**Corresponding Author**:
Judith Moeller
J.E.Moller1@uva.nl



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## ABSTRACT

Scholars generally agree that there is a gap between lower- and higher-educated citizens on civic competence, which solidifies during adolescence. This two-wave panel study examines how an educational intervention focused on media literacy influences civic competence among lower-educated youth (age 16 to 26). Additionally, the level of civic involvement among participants is tested on three measures of civic competence: news media literacy, political efficacy and political knowledge. The findings suggest that the educational program has influenced the level of political efficacy and news media literacy. Furthermore, participants with the most active involvement in the program, i.e. co-created the educational video material, also showed the strongest improvements of political efficacy and political knowledge.

**Keywords:** *media literacy program, civic education, civic competence, fake news, political efficacy.*

## INTRODUCTION

Young citizens need training in participatory media skills and need to be provided with the opportunities to experiment with online civic participation to fully employ this potential of a mediated civic participatory culture (Bennett et al., 2010; Kahne & Bowyer, 2019). This is especially the case for lower-educated youth, who usually start lagging behind in their socialization into citizenship during adolescence when compared to their higher-educated peers (Moeller & de Vreese, 2015). The educational environment, therefore, seems the optimal context to optimize their socialization in the high-choice media environment, although previous research on such classroom interventions has yielded mixed results (e.g., Ashley et al., 2017; Tully & Vraga, 2017).

Formal curriculums and extracurricular activities in school that include citizenship are effective and enhance citizenship competences and behavior among students (Geboers et al., 2013). Besides formal education, students can also develop their civic competences through the informal curriculum (Kirlin, 2002; McFarland & Thomas, 2006; Mirazchiyski, Caro, & Sandoval-Hernández, 2014; Youniss et al., 1997). Reichert and Print (2018) define this as "those school-curriculum learning experiences planned to achieve pre-determined outcomes that are not part of the formal curriculum." Their study shows that informal learning experiences, in addition to formal civics learning at school, can help to develop active, democratic citizens.

There is, however, a lack of empirical studies of how these experiences should be designed to reach the group of lower-educated adolescents. Not only do the lower-educated, generally, score lower on measurements of civic competence, but young Dutch citizens have specifically been found to follow the news less, have unfavorable civic attitudes, and a lower likelihood to turn out at future elections relative to their peers in other countries (Munniksma et al., 2017). This is in stark contrast to the overall health of democracy in the Netherlands, which is one of the five most democratic countries in the world according to Freedom House (2018).

This study examines how political involvement among this group can be stimulated through a civic educational intervention in the classrooms of vocational schools. The program was specifically designed for this target group to stimulate civic competence, in particular internal political efficacy, news media literacy and political knowledge. We expect that civic and media education will enhance civic competence, as a recent study found that news media literacy positively relates to political knowledge and internal political efficacy (Ashley et al., 2017). A two-wave panel study with a pre-post design was employed to test the impact of the civic educational classes as well as of the additional impact of more active involvement in the program (of students who produced the video material) on three pillars of civic competence: news media literacy, internal political efficacy and political knowledge.

### Co-creating civic education

While it is known that both formal and informal education can affect students' citizenship, less is known about the importance of active involvement in the development of such an educational program. Letting students define and lead class activities, evidently enhances learning outcomes (Campbell, 2005; Pasek et al., 2008; Torney-Purta, 2002). The educational intervention evaluated in this study focuses on active and self-regulated experiences with news media and politics.

Jenkins (2006) discusses the importance of "participatory cultures", which are digital-oriented networks with low barriers to artistic expression and civic engagement in a context supporting the creation and sharing of one's creations. These participatory cultures are characterized by some type of informal mentorship in which the most experienced pass on their knowledge to novices, and where members believe that they are part of a social network in which their contributions matter. When participatory activities in such networks are available, student interest in civic participation will most likely be activated (Jenkins, 2006; Kahne & Bowyer, 2019; Kahne et al., 2013; Syvertsen et al., 2007).

The educational program under study covers most elements of such a participatory culture. Considering the specific characteristics of the program, including an element of active involvement in co-creation of the video material of the program by the students, we expect learning outcomes for political internal efficacy, political knowledge and news media literacy. Previous studies on the effects of educational interventions related to news media literacy have shown mixed results, however (for an overview, see Ashley, et al., 2017). For instance, Tully and Vraga (2018) found that some students enrolled in communication courses experience more growth in news media literacy than others. These students are characterized by a higher need

for cognition and stronger political partisanship, the latter being consistent with studies that found political divides in response to media literacy interventions (e.g., Tully & Vraga, 2017). One study found that exposure to a media literacy video increased trust and perceptions of news credibility (Vraga et al., 2012), whereas another study found that learning about media ownership lowered perceptions of news credibility (Ashley et al., 2010). Finally, it was found that the ability to critically evaluate political media messages is conditioned by preexisting media literacy education (Vraga & Tully, 2015).

In line with these findings, the educational intervention under study was designed to allow co-creation of news videos to stimulate civic competence. Specifically, a small number of students were invited to follow a series of lectures about (local) politics and media, and then participated on a course in which they produced "fake news" items, see Figure 1. The lessons focused on diverse topics, such as media effects, filter bubbles, public opinion, recognizing and producing fake news. The purpose of the course was to challenge the concept of truth and objectivity in reporting. By producing items that did not rely on facts but were intended to look as if they were, students were stimulated to understand the pitfalls of the news production process and at the same time learn about strategies to evaluate the quality of the information they receive (Nee, 2019; Vraga & Tully, 2019).


Figure 1. *Screenshot of one of the (fake) news videos, an interview with the Minister of Internal Affairs, created by students*

This involvement in the production process might make the students more aware of the importance of media messages in public life, and enables them to both critically evaluate and create messages (Hobbs, et al. 2013). This arguably enhances their political efficacy and empowers them to become active participants in civic life, which may eventually lead to increased knowledge about media and politics as well. After all, one crucial component in becoming politically sophisticated is being interested in politics (Luskin, 1990), and that is exactly one of the purposes of the program. In composing the fake news videos, students have to consider how to target the audience, how to represent reality in their messages, and which techniques to use to create the videos. These considerations are all related to important dimensions of news media literacy (Vraga et al., 2015), and thus likely to influence their level of media literacy as such.

A larger number of students did not participate in the lectures or the production of the news videos, but followed a more regular civic education program in which the videos produced were used as examples. In this field experiment[1], we compare those involved with the production of the videos, with those who were only exposed to the end results, and a control group who did not see the videos. All three groups followed the regular lessons of the media literacy program. Thereby, we can examine both the effect of the regular lessons of the program – which all students followed – as well as the effect of the active involvement in the creation of the program – in which only a part of the students was involved. All in all, we expect a positive effect of active involvement in a media literacy program on top of simply following this program.

## METHOD

### Data collection and educational intervention

The data were collected within vocational schools (in Dutch: MBO) in the area of Amsterdam, the Netherlands. Before this series of lessons was given, students answered a questionnaire about the hypothesized dependent variables in a pretest (i.e., Wave 1 taking place in February/March 2018)[2]. After

[1] The content of the educational program can be found on this website (in Dutch): https://www.mbomediawijs.nl/portfolio/fake-news-media-politiek/

[2] It is important to note that for one of the three groups studied (the group who created the videos), the lectures started before our first measurement, because they were following a longer program. This means that the program could already have had an effect on the outcome variables at the time of the first measurement.

the educational intervention finished, largely the same questionnaire was repeated as a posttest (i.e., Wave 2 in April 2018).

**Sample**

Students were invited to participate in the surveys via their teachers. This resulted in a sample of 518 students in Wave 1. Most students studied at MBO level 4 (there are 4 levels in total, this is the most common level; 83%) and their ages ranged between 16 and 26 (M = 17.44, SD = 1.80). On average, they had little political interest (M = 2.86, SD = 1.40; scale running from 1 to 6). Because the questionnaires were filled in during the lectures, fewer teachers were willing to let their students participate in the second wave. Despite our best efforts to explain the importance of the second measurement, many of the teachers did not want to allocate teaching time to what appeared to be the same questionnaire. Wave 2, therefore, was completed by only 101 students. The students who participated in both Wave 1 and 2 (N = 101) all participated in the educational program.

**Stimulus and experimental conditions**

Students in this study we compare three groups of students in three different experimental conditions.

*Co-creation group*. Students in this group participated in the co-creation of the video material (N = 11). Co-creation is operationalized as taking part in a course about politics and then actively producing video content that is partially inaccurate or misleading (fake news). Students self-selected to be a part of this group.

*Watched video*. This is a group of students that engaged actively with the videos produced by the co-creation group in class, but did not participate in the co-creation (N = 41). However, watching the videos was embedded in a discussion about the creation of news and misinformation. Assignment to this group was decided by the school.

*Lessons only*. A group that did not engage with the co-created material but did engage with the lessons (N = 49). Assignment to these groups was handled by the school.

The participants of all three groups followed the media literacy lessons of the educational intervention. The participants who created the videos were enrolled in one and the same course, whereas the other participants were enrolled in one of the other circa 30 courses, and thus participated in other conditions[3]. The average group size for courses at this level of education in the Netherlands is 20 (Onderwijs in Cijfers, n.d.).

**Measures**

The success of the intervention was measured on a range of variables that all represent aspects of reflective democratic citizenship in participatory cultures: The confidence of the participants in their roles as citizens (internal political efficacy), their critical understanding of media as democratic institutions (news media literacy) and their general understanding of politics (political knowledge). The operationalizations of these variables are displayed in Table 1.

Although adapted from original scales, they are adjusted to the literacy level of the students in our sample for purposes of understanding.

*Internal political efficacy.* (see Niemi et al., 1991) was the average score of three items measured on a 7-point scale ranging from completely disagree to completely agree (Wave 1: Cronbach's $\alpha$ = .88, M = 3.60, SD = 1.70, Wave 2: Cronbach's $\alpha$ = .91, M = 3.78, SD = 1.56).

*News media literacy.* Eight items measured news media literacy items and were largely adopted from Ashley et al. (2013). Just as for the other scales, the phrasing of the exact statements was slightly adjusted in coordination with the teacher of the students to match their reading ability and avoid complicated words. Some of the original items were not included in the current survey, because they did not reflect the exact purpose of the current study; for instance, the question of how "Lighting is used to make certain people in the news look good or bad" (p. 13.) deal rather with the technicalities of news production than understanding the role of media as societal agents. Nevertheless, we used all three dimensions that they distinguished (i.e., authors and audiences, messages and meanings, as well as representation and reality). All items were tapped on a 7-point scale ranging from completely disagree to completely agree (Wave 1: Cronbach's $\alpha$ = .91, M = 5.08, SD = 0.89, Wave 2: Cronbach's $\alpha$ = .91, M = 4.76, SD = 1.04).

[3] Communication with the schools with regard to how many teachers actually shared the questionnaire with their students and how large the classes were proved to be very difficult. Hence, we do not have precise information on the response rate in the first wave.

*Political knowledge* of current events, is measured at Wave 2 with a battery of six knowledge questions, resulting in a political knowledge index ranging from 0 to 6. Mokken scale analysis showed that these items together formed a strong and reliable scale measuring political knowledge (H = .53, M = 2.18, SD = 2.01).

Table 1. *Survey items used to measure the dependent variables*

| |
|---|
| **Political efficacy (all with scale from 1 "completely disagree" to 7 "fully agree"):** |
| I am good at discussing politics |
| I think I am better informed about politics than my peers |
| I think I have a good understanding of the important political topics |
| **News media literacy (all with scale from 1 "completely disagree" to 7 "fully agree"):** |
| The boss of a news organization influences the news that is made |
| News media choose news items that attract as many people as possible |
| People can always find news that confirms their political opinion |
| Two people can see the same news, but still get other information from it |
| People are influenced by news |
| News makes things more dramatic than they really are |
| Negative news gets more attention than positive news |
| Journalists work on neutral reporting of the truth |
| **Political knowledge (multiple choice with 5 answer options, including "don't know"):** |
| Which political party won most seats during the municipal elections in Amsterdam? |
| What was the outcome of the referendum on the Intelligence and Security Services Act? |
| What was the subject of the referendum on the Intelligence and Security Services Act? |
| How well did local political parties perform in the municipal elections compared to the previous municipal elections in 2014? |
| At the municipal elections one politician was filmed while he was doing a strange dance. Who was that? |
| Why was the company Cambridge Analytica in the news? |

To test whether respondents who participated only in Wave 1 (N=430) differ from respondents who participated in both Wave 1 and Wave 2 (N=118) on the key dependent variables, independent sample t-tests were performed. Internal political efficacy and news media literacy – all measured in Wave 1 – did not differ significantly between respondents who participated in both Wave 1 and Wave 2 or those respondents who only participated in Wave 1 (see Appendix A). Thus, panel attrition did not lead to significant differences in the composition of the panel with regard to the key dependent variables. We therefore follow the assumption that respondents who participated in Wave 2 are an acceptable sample of the respondents who participated in Wave 1.

### Analytic strategy

First, the hypotheses regarding the effectiveness of the educational intervention for improving civic competence were tested with dependent sample t-tests; i.e., testing whether scores of the same person in Wave 2 are higher than in Wave 1. This is a within-person test. Second, the hypotheses regarding the impact of active involvement in the educational program on civic competence were tested with a between-subject model; i.e., a mixed-model ANOVA examining whether levels of internal political efficacy and news media literacy differ for the different experimental conditions. An ANCOVA (also between-subjects) was performed to test the impact of the experimental conditions on political knowledge; this model includes an initial knowledge score as covariate in the analyses (i.e., knowledge was tested with different batteries of items in the two waves). Taking such a lagged dependent variable into account is a conservative approach of hypothesis testing, because it already explains most of the between-persons variance.

## RESULTS

To test whether the educational intervention improves civic competence, we investigate the three components media literacy, political efficacy, and political knowledge separately in this section. Specifically, the respondents' level of internal political efficacy and news media literacy before their participation in the educational program (Wave 1) and at the end of the program (Wave 2) were statistically compared. The results of the dependent t-test showed that for internal

political efficacy there was a significant difference in the average level of internal political efficacy before (M = 3.56, SD = 1.71) and after (M = 3.81, SD = 1.55) the educational program, t(105) = 2.02, p = 0.046. These results provide evidence that the respondents had more confidence in their own political competence after participation in the civic educational program (see Figure 2).

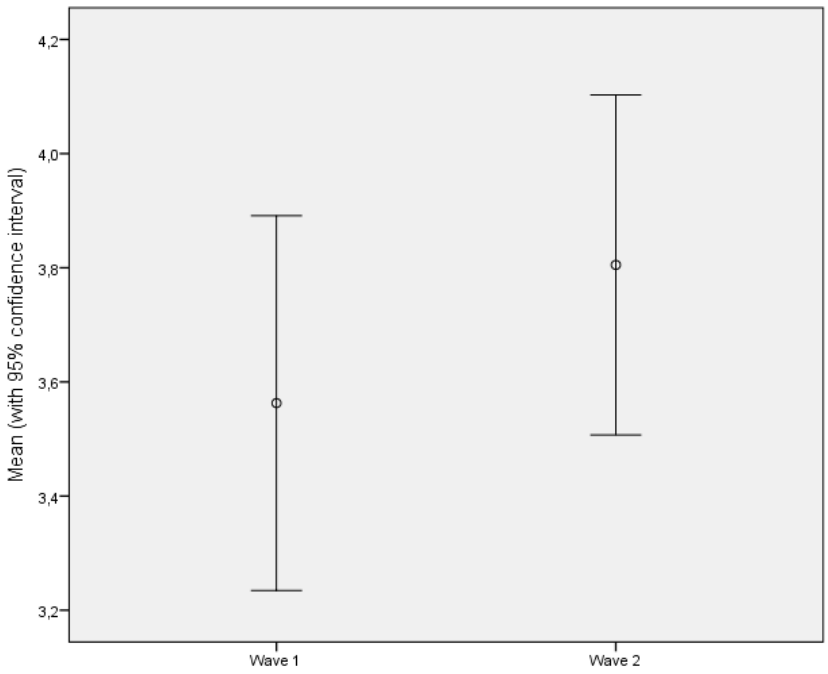


Figure 2. *Mean level of political efficacy before (Wave 1) and after (Wave 2) the educational program (N = 106)*

For news media literacy, a significant difference also emerged when comparing respondents' score before (M = 5.09, SD = 0.91) and after (M = 4.80, SD = 0.98) the educational program; t(104) = -2.60, p = 0.011. These results suggest that the average level of news media literacy was lower after participation in the civic educational program. We will reflect on this unexpected finding in the discussion.

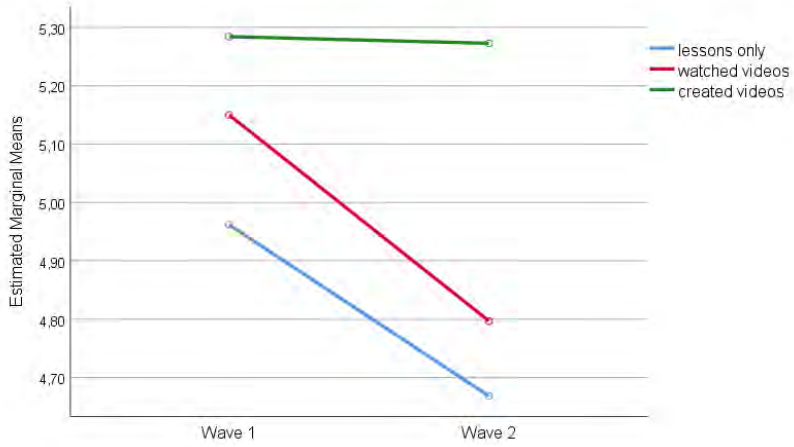


Figure 3. *Mean level of news media literacy before (Wave 1) and after (Wave 2) the educational program across the different experimental conditions (N = 101)*

Second, the impact of active involvement in the program on internal political efficacy and news media literacy was tested in a mixed-model ANOVA, in which the pre- and post-design was treated as a within-subject factor and the experimental conditions as between-subjects factor. For internal political efficacy, there was no significant main effect of time, i.e. difference in the level of efficacy before and after the educational program, $F(1, 97) = 1.07$, $p = .305$. There was a significant main effect of experimental condition, $F(2, 97) = 6.93$, $p < .010$. Post-hoc analyses using Tukey's HSD indicated that higher efficacy was found for participants who created video material than for participants who only followed the lessons ($p = .002$), but efficacy did not differ significantly between participants who only watched the videos and the participants who created the videos ($p = .104$) and participants who only followed the lessons ($p = .076$). There was no significant interaction between internal political efficacy and experimental condition $F(2, 97) = 0.44$, $p = .648$. This means that the difference in efficacy between the groups with more active than passive involvement did not further increase during the educational program.

For news media literacy, there was no significant main effect of time, $F(1, 97) = 2.35$, $p = .129$, and no significant main effect of experimental condition $F(2, 97) = 1.80$, $p = .171$. Although not significant, Figure 3 shows a downward trend for news media literacy in participants who were not involved in the co-creation of video material, while the average level of news media literacy among participants who did create fake news videos remains stable across waves. Most likely the election campaign caused a growing lack of confidence in one's media literacy, but this was mitigated by actively participating in the production of news videos. There was also no significant interaction between news media literacy and involvement $F(2, 97) = 0.38$, $p = .688$.

Fourth, the impact of the experimental conditions on political knowledge was tested in an analysis of covariance (ANCOVA), while controlling for the existing political knowledge in Wave 1 as covariate. There was a statistically significant difference between groups, $F(2,94) = 6.55$, $p < .001$. Post-hoc tests revealed that the average level of political knowledge was statistically significantly higher for participants who created videos than for participants who only followed lessons ($M = 1.73$, $SD = 1.83$, $p = .002$) and who followed lessons and watched, but not created, videos ($M = 2.07$, $SD = 1.85$, $p = .004$). This means that those students who actively produced the videos acquired significantly more political knowledge between the two survey waves (see Figure 4). There was no statistically significant difference between participants who followed media literacy lessons only or participants who followed the lessons and watched the videos. Comparing the estimated marginal means showed that political knowledge was highest for participants who were actively involved in creating videos ($M = 3.93$) compared to the more passively involved participants who did not create videos ($M = 1.89$, $M = 2.03$ respectively).

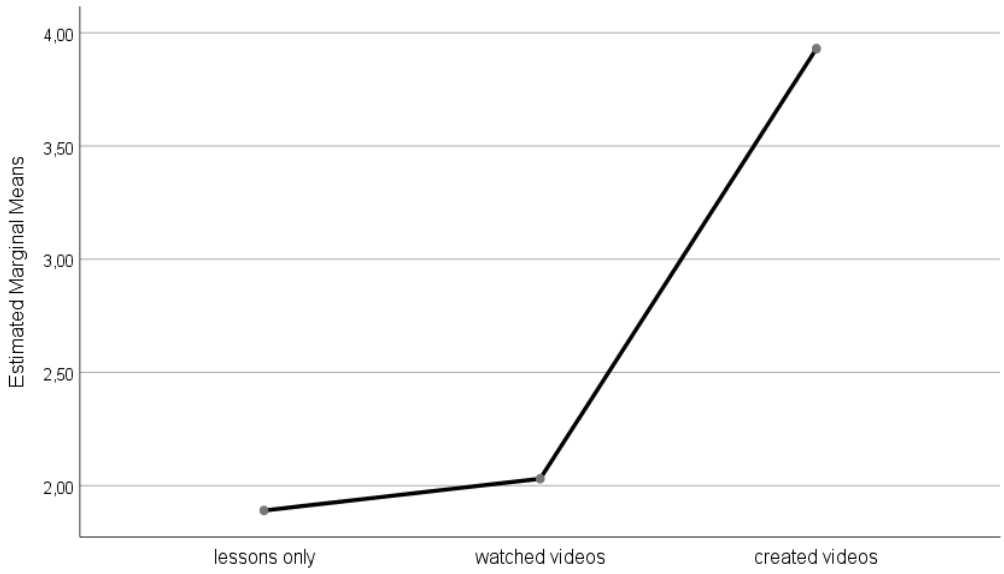


Figure 4. *Mean level of political knowledge after the educational program (Wave 2) across the different experimental conditions (N = 98)*

## DISCUSSION

In this study, we investigated the impact of a co-created educational intervention program specifically designed for lower-educated adolescents with the purpose of stimulating their development of civic competences. In this program, students either actively co-created and produced fake news videos, watched and discussed the end result of the news videos, or they followed lessons about these topics in class in a more passive way. Altogether, we find a measurable effect of the educational program itself – for active as well as passive involvement: both had a positive effect on political efficacy. The educational program, thus, increased participants' confidence in their own political competence (Kahne & Westheimer, 2006; Pasek et al., 2008). This finding shows that a media literacy program – similar to citizenship education programs (e.g., Geboers et al., 2013; Niemi & Junn, 1998) – can contribute to the civic competence of young adults. Even in this case, where the focus was on the highly contested topic of fake news (Nee, 2019; Vraga & Tully, 2019).

Somewhat surprisingly, we also find that news media literacy decreased after participation in the program. At least those who watched only few or none of the videos (i.e., more passive involvement) became less critical of news production over time. Does this mean that the project failed to deliver on its purpose? Arguably, yes: if the goal was to increase media literacy, then the program was only able to mitigate a general downward trend for the group who were actively involved in creating fake news videos but had no effect on those who only followed the media literacy lessons or only watched the fake news videos. However, if we interpret this finding in the context of the general decrease in media trust and the perceived omnipresence of "fake news", perhaps the program was able to generate literacy about media after all (Fisher, 2016). Potentially, the program has actually made students less skeptical about the performance of mainstream news outlets and more aware of their own limitations in evaluating the quality of news items. Evidence for this interpretation could be seen in the fact that literacy scores were very high at the start of the study, which could imply that at the onset of the program young students were simply cynical about the news media and overly optimistic about their own skills to identify misinformation. A closer look at the specific items of the news media literacy scale shows that the students especially became less skeptical about how media target their audiences and how media affect perceptions of reality (Ashley et al., 2013). By learning about topics such as fake news and online filter bubbles, and the function of journalism more generally, the students may have actually developed a less negative opinion toward the regular media vis-à-vis online "clickbait" media. Neither fake news nor partisan bias are serious issues in the Dutch context, and the educational program may have made the students aware of this.

The negative effect on news media literacy, additionally, can be explained by the empirical operationalization of this construct. Using Ashley et al.'s (2013) measurement – adapted to the specific Dutch context with lower-educated students – we were able to measure how people were able to critically reflect on the functioning of the media in a society. But this does not provide us with an absolute measurement of how accurate their impression of the media is. Students might have had misplaced confidence in their ability to identify misinformation at the onset of the program, given that actual knowledge tends to be associated with increased skepticism (Vrage & Tully, 2019). Future studies should also measure self-perceived media literacy, which taps one's ability and confidence in critical news consumption (Vraga, et al., 2015) and compare against one's actual knowledge and literacy skills. We strongly recommend future research also to incorporate another dimension of news media literacy in their research designs: "news media knowledge structures" as introduced by Maksl et al. (2015) and later applied by Ashley et al. (2017). Using multiple-choice questions, this measurement tapped people's actual knowledge about how the media function. Counting the number of correct answers allows for an unambiguous measure regarding how much citizens know about the media. This alternative measurement would have probably yielded an opposite effect; for example, Ashley et al. (2017) show that the three dimensions of media literacy have different kinds of relationships with a range of outcome variables.

With regard to the different experimental conditions, we find no changes over time on the dependent variables (before or after participation in the educational program), only differences between the groups persisted over time. The group that was part of the editorial team and produced the videos showed both the highest level of political efficacy and the highest levels of acquired political knowledge. These highly involved students were thus not only more confident about their competence (i.e., efficacy), but actually also more knowledgeable than the students that were less involved. The opportunity for students to create their own videos

and share their creations with others in a digital-oriented network reinforced their required competences for civic engagement (Jenkins, 2006; Syvertsen et al., 2007).

Yet, there are two alternative explanations for this finding. On the one hand, the difference could be attributed to selection effects. Those already scoring high on civic competence were particularly likely to actively participate in the program. On the other hand, the group involved in producing the news videos started their program shortly before we started the observations in Wave 1; thus, they could already have become more engaged by the time of the first measurement. This exemplifies the difficulty of fielding an experiment on the effects of an educational intervention focused on media literacy in real-life circumstances. However, this is necessary to measure its real effects. Nevertheless, the results suggest that a media literacy program as investigated in the current study is effective for both students who actively and passively participate in the program, but most effectively for those highly involved in the program.

This study employed an experimental research design in a field setting to maximize both external and internal validity. However, we encountered several limitations that should be considered when generalizing the results. First, we started our observation at the beginning of the educational program in the schools. The students actively involved in the video production had started a month earlier and could thus already be affected by the program. Second, since participation in the co-created video production was voluntary, we need to take selection effects into account. Those who were already more interested in news could have been more motivated to participate in the course. Third, there is a substantive attrition of participants between the first and second wave. While this did not lead to a significantly different composition of the sample, we cannot exclude that those who did not participate in the second measurement differ on other relevant, but unobserved variables such as motivation.

An obvious limitation of the current study is the small sample size (especially in the last wave) of the students who had been involved in the production of news videos. Small sample sizes lead to larger standard deviations, and thus conservative statistical models, which has decreased the power of the current study to yield strong and significant effects. Moving forward we suggest employing mixed-method designs to overcome sampling issues and gain further understanding of how adolescents obtain media literacy skills.

Notwithstanding these limitations, we conclude that actively participating in a media literacy program focusing on the production of news videos that challenge truth, facts, and objectivity is a successful path to engage lower-educated youth. Thinking about stories that are not true, but are presented as such, triggers the creativity of the students without making them feel incompetent, which leads to rising levels of efficacy and knowledge. Building on Ashley et al. (2017), we also observe that having insight into media and news creates a deeper understanding of the political process. This leads to increased political engagement, in particular, current events knowledge and higher levels of political efficacy. It should be noted that the educational program was resource and labor intensive; yet, it shows that these investments have paid off: Only 5 media literacy classes have already contributed to a significant improvement of young citizens' belief that they can understand and therefore participate in politics.

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## APPENDIX

Table 1. *Differences between respondents on key dependent variables tested with independent T-tests*

| | Respondents (Wave 1 only) | | | Respondents (Wave 1 and 2) | | | | |
|---|---|---|---|---|---|---|---|---|
| | *N* | *M* | *SD* | *N* | *M* | *SD* | *t* | *p* |
| Internal political efficacy | 420 | 3.63 | 1.53 | 116 | 3.60 | 1.70 | 0.186 | 0.852 |
| News media literacy | 413 | 4.94 | 1.05 | 116 | 5.08 | 0.89 | -1.297 | 0.195 |