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Education in the News and in the Mind

PISA, News Media and Public Opinion in Norway, Sweden and Finland

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Abstract

The Programme for International Student Assessment (PISA) has gained popularity in educational debates, and scholars argue that the tests influence national educational governance. It has further been claimed that PISA has penetrated the news media and that public opinion on education has been affected, but few have offered empirical evidence for such arguments. The present study contributes to the area by investigating the relationship between (i) news consumption and public awareness of PISA, and between (ii) awareness of PISA and public opinion on education in Norway, Sweden and Finland. The findings suggest that consumption of newspapers and public service TV (PBS) news is positively associated with awareness of PISA; consumption of commercial TV news is negatively associated with awareness of PISA. Further, "PISA effects" on public opinion are dependent upon news consumption and political considerations. The most significant relationship is found in Norway, where mass political polarization is stronger among respondents who are aware of PISA, compared to those who are not.

Keywords: education, PISA, news media, public opinion, political polarization

Introduction

International comparative achievement tests have gained significant attention in popular educational debates. These debates have been boosted by the Programme for International Student Assessment (PISA) that has been carried out every third year by the Organisation for Economic Co-operation and Development (OECD) since 2000.[1] By employing standardized tests in reading, mathematics and science among 15-year-olds, the OECD ranks countries according to performance. The results have shocked certain countries, and influenced education policies. A good example is Germany. On the first test the country ranked 20th among 32 countries, well below public expectations. Negative stories dominated the news media,[2] and policymakers proposed urgent reforms (Grek 2009). Conversely, in top-performing Finland, educationalists were puzzled by the great results (Välijärvi, Linnakylä, Kupari, Reinikainen, & Arffman 2002), but policymakers took advantage of the situation by justifying current policies using PISA as positive "proof" (Rautalin & Alasuutari 2009). In general, several scholars argue that PISA has a potentially massive influence on education policies because the OECD is perceived to be a highly authoritative organization

(Elstad & Sivesind 2010; Grek 2009; Rautalin & Alasuutari 2009; Takayama 2008; Vestman & Andersson 2007).

However, all policymaking in democratic countries is dependent upon public support, and scholars as well as commentators have tended to draw a link between extensive media coverage of PISA and public opinion towards education policies (e.g. Christie 2008; Elstad & Sivesind 2010; Grek 2009). Still, few if any have offered empirical evidence supporting such claims (Elstad's [2010] study is a brief exception, as he presents an interesting content analysis of PISA in Norwegian news, but his public opinion data are very limited). The purpose of the present article is therefore to contribute more detailed knowledge concerning the potential "effects" of PISA on the news media and public opinion, not only by analysing more robust data, but also by studying three Nordic countries with different experiences of PISA.

In order to draw on these comparative advantages, survey data have been collected in three rather similar countries, but countries that have had different outcomes on the PISA tests: Norway, Sweden, and Finland. The research strategy was twofold: 1) to investigate the link between news exposure and awareness of PISA, and 2) to investigate the mediating effect of awareness of PISA on public opinion.

It is easy to theoretically argue that the nature of PISA tests fits characteristics of the modern news media. The effect of PISA on public opinion is more complex, and a key argument here is that possible effects are multidimensional. Individuals interpret the tests differently according to individual characteristics, and the effect of the tests on attitudes therefore varies as a function of these characteristics. Thus, it is important to estimate models in which awareness of PISA is linked with possible individual determinants. This is done empirically by comparing "clean" regression models with models including interaction terms, where awareness of PISA is dependent upon news consumption and political sympathies.

Norway, Sweden and Finland are well suited to such a comparative investigation because they are said to share many institutional similarities in terms of welfare, education and media (Esping-Andersen 1990; Hallin & Mancini 2004; Strömbäck, Ørsten, & Aalberg 2008; Telhaug, Mediås, & Aasen 2006). However, the countries' respective results on PISA have been different. Finland is an international top-performer, while Norway has performed well below expectations. Sweden has performed somewhere in between, but closer to Norway than Finland.

News Media and Awareness of PISA

Due to a combination of declining party membership, detachment of media institutions from political parties and technological developments, the news media are today the most important source of information about politics and current affairs (Gunther & Mughan 2000). This is where most opinions are made public, and this is where citizens get information about society. Although most citizens have personal experience of educational institutions, the news media provide citizens with a "general" picture of the current education system. It is not likely that this general picture is representative of the education system as a whole. There is more information in society than the media can present, and journalism therefore becomes a social construction of reality (Altheide &

Snow 1979; Jensen 1986; Schudson 1991): we must rely on journalists to select what sort of social events are *newsworthy* (Strömbäck 2004).

The concept of "newsworthiness" was introduced by Galtung and Ruge (1965), when they discussed 12 hypotheses concerning the probability of violent conflicts receiving media attention.[3] Different elaborations and simplifications of the original list have been presented by various scholars, but there is general agreement that the basic principles apply to journalism in the western hemisphere (McManus 1994; O'Neill & Harcup 2009). One recent contribution summarizes these in terms of four "news criteria" (Aglen 2007): (1) *Aspects of the event* implies that events that surprise – that are sensational, conflict-oriented, clear and easily understood, and that have the potentiality of having significant, often negative consequences – will be more likely to be considered newsworthy; (2) *Identification* implies that events are more newsworthy if the audience feels identification with the actors in question, and if the event is close in time and space; (3) *Power and status of the actors* implies that events involving powerful and/or high-status actors often becomes news, while (4) *media as production systems* points to the market role of media companies. If an editorial has invested in a case, follow-ups are less demanding and therefore economically rational.

These criteria can help us understand why PISA is likely to receive attention from journalists. The first criterion, *aspects of the event*, is probably the most relevant. Rankings of educational performance are easily understood – both by journalists and their audience. Performance beyond expectations is sensational. If performance is negative, it can even boost political conflict, and thereby influence public policy. Most citizens also have experience of educational institutions, both through personal experience and through the experiences of friends and family. They therefore easily *identify* (second criteria) with news about education. As the sources of such rankings are probably perceived as highly authoritative and trustworthy among journalists and the public (PISA is published by OECD), the likelihood of newsworthiness is further increased (cf. the third criteria, *power and status*). Because statistics and other relevant material have already been published, it is relatively easy and cheap for journalists to create news stories based on the topic (fourth criteria).

In sum, it is therefore likely that citizens' awareness of the PISA tests will increase with news consumption. The more news stories about education in a country, the more aware citizens should be of relevant educational issues. This can be explained by so-called "agenda-setting". The theory of agenda-setting assumes that there is a relationship between what the media focus on at a certain point in time – what is "hot news" – and what citizens simultaneously find important and discuss in their social life (McCombs & Shaw 1972). Citizens are not necessarily affected by the tendency of news stories, but news stories affect what citizens think about. The logic is simply that the greater the number of news stories about an issue, the more likely citizens will comprehend that issue. Agenda-setting has been widely studied, and the logic of the theory has been confirmed extensively (e.g. Barabas & Jerit 2009; Dearing & Rogers 1996; Lowry, Nio, & Leitner 2003; Protess & McCombs 1991; Strömbäck 2004).

While the volume of news stories related to education probably varies across countries, so does the content of those stories. Through "framing" and "priming", the news media arguably influence *how* and *what* citizens think when they are confronted with issues of education. Framing refers to how news stories are presented. The argument is

that *how reality is framed influences people's frame of the same reality* (Iyengar 1990). What the media focus on and how stories are presented are crucial determinants of how citizens comprehend issues (Chong & Druckman 2007a, 2007b; Iyengar 1990, 1991). Further, through priming, the news media connect issues (such as education) with different phenomena and actors (such as PISA and OECD) (Althaus & Kim 2006; Iyengar & Kinder 1987). Thus, citizens may think about international assessments when evaluating the education system.

The relevance of this broad literature is summarized in a recent study. Barabas and Jerit (2009) find that with increased volume, breadth, and prominence of news stories about specific issues comes increased policy-specific awareness of those same issues among citizens. Therefore, any increase in the volume of news stories on education should result in more awareness of relevant educational issues.

H1: The more news citizens consume, the more likely they are to be aware of the PISA tests

A PISA Effect on Attitudes?

Thus far, the focus has been on the relationship between news media, news consumption and awareness of PISA. But it has also been claimed that PISA influences public opinion. In the study from Norway mentioned above, Elstad (2010: 106) argues that PISA has influenced public opinion in Norway. His conclusion is nevertheless based on a rather sketchy inference: opinion polls conducted one month after the publication of PISA in 2003 and 2006 revealed that the number of citizens believing that the quality of Norwegian schools has declined has increased after the latter publication. He neither discusses nor controls for any alternative explanations.

It nevertheless seems likely that the content of such assessments does influence public opinion in some way. The obvious challenge is that other factors probably are equally, or even more, important. News consumption and awareness of PISA may have severe limitations as isolated determinants for variation in public opinion, because individual attitudes and values determine how one perceives various aspects of the education system. For instance, if someone studies how citizens in a poor-performing country evaluate the quality of education, awareness of PISA can pull in two different directions. Those who emphasize PISA and believe that it reflects some sort of neutral evaluation of education will obviously express more negative viewpoints than citizens who are critical of PISA and emphasize other aspects of the system.

Different individual determinants are important in this regard, and the importance probably varies across countries. At least theoretically, political/ideological values are factors that should be important across democracies. The extent to which awareness of PISA can explain variation in public opinion is likely to be dependent upon ideological and political considerations. For instance, the recent trend of "instrumentalization" in education (the spread of assessments such as PISA) has been labelled "neo-liberal" (Ahonen & Rantala 2001; Telhaug et al. 2006). Thus, support in such tests could be associated with right-wing ideology. The fundamental *role* of education in society is also ideologically disputed. In the extension of the welfare states after WWII, education was seen as a *tool* in welfare state policies (Arnesen & Lundahl 2006; Telhaug et al. 2006). Support in the universalistic "Nordic" welfare states has been strongest among left-

wing parties (Nygård 2006). In a study of political debates about education in Norway since WWII, Tuastad (2008) finds a consistent trend in which left-wing parties argue for public, comprehensive and unified schools, while right-wing parties argue for more parental freedom in their choice of education, more private schools and less comprehensive curricula. Left-leaning citizens may therefore be more supportive of the welfare function of education (and thus more critical of international assessments), while the opposite applies to right-leaning citizens.

Thus, in addition to measuring the explanatory power of awareness of PISA and news consumption, there is also an emphasis on political determinants. The argument, however, is that these factors must be seen in relation to each other: the nature of "PISA effects" is dependent upon relevant individual characteristics.

H2: Awareness of PISA influences the effect of media exposure on attitudes towards education.

H3: Awareness of PISA influences the effect of political considerations on attitudes towards education.

Data

Comparative data for Norway, Sweden and Finland on media coverage and public opinion have been collected as part of the larger project "Media Systems, News Content, and Public Perceptions of Political Reality (MS)". The main data in the present article are from a comparative Internet survey carried out in January 2009. Representative samples were interviewed by YouGov/Polimetrix using Internet questionnaires in the three countries. The sampling procedure in each country consists of drawing "panels" of "pools" of respondents who have agreed to participate in web surveys. With large databases of possible respondents, samples are drawn from these pools by applying a "matching algorithm" – selecting respondents from the pools by matching their characteristics with the population of interest. Based upon socio-demographic characteristics, YouGov/Polimetrix interviews a representative sample of 1,200 respondents in each country. In a second step of matching, the sample is downscaled to a best fit of 1,000 individuals. Finally, differences in socio-demographic characteristics between the samples and the populations are further minimized by constructing weighting variables (Strabac & Aalberg 2009). In order to ensure the validity of the data, as part of the larger project, additional telephone surveys with a replication of some key questions were commenced with representative samples in Norway and the US. Comparative analyses of the telephone and Internet surveys reveal that variations in distribution of answers are minimal (Strabac & Aalberg 2011).[4]

As supplementary data, news stories about education published in the news media three non-consecutive weeks prior to the survey were also analysed. In each country, the main tabloid, the main elite newspaper and one regional newspaper, as well as the main news programme on public service TV (PBS) and the largest commercial TV channel, were sampled at the end of 2008 and early 2009.[5] All news stories related to education were coded quantitatively according to a standardized code book (Brekken & Aalberg 2010). The aim of collecting these data was to investigate how salient educational issues were *in general* in the mainstream media in the three countries prior to the survey.

Hence, this data contribute to the general survey questions on media use by providing a snapshot of "education" as a news issue.

The data are analysed in two empirical sections. First, media and survey data are analysed in order to investigate news coverage of education and the link between news consumption and public awareness of PISA. Second, public opinion on education is studied in order to evaluate the potential effect awareness of PISA has on attitudes.

Media Coverage of Education and Awareness of PISA

In order to draw a backdrop of the saliency of education as a news issue prior to the survey, this section starts with some descriptive statistics based on the content analysis. During the three weeks, 216 news stories about education were published in the sample. It is hard to judge whether these weeks were representative of what is "normal" news coverage on education. It is reasonable to believe that media attention increases if some extraordinary events occur, such as the publication of sensational reports or terrible accidents. Such events could make it more difficult to compare three different countries if they are not relevant to all three. As far as this author has observed, no such extraordinary events happened during this period. The financial crisis that erupted in the autumn of 2008 still dominated the headlines, and the total number of news stories about education could therefore have been deflated. However, this was a global crisis, and any "Fannie Mae" effect should therefore be relatively similar across countries. This was not a "PISA year", but the total amount of general media coverage on education alludes to the overall saliency of educational issues just prior to the survey.

In Table 1, news stories about education in each country by tendency and frames are presented.

Table 1. *News Stories about Education, News Frames (percent)*

	Norway	Sweden	Finland
Negative coverage in general	21.3	14.0	25.0
Criticism of education policy	18.0	16.3	11.6
Credit to education policy	3.3	11.6	9.8
Criticism of educational infrastructure	6.6	2.3	21.4
Credit to educational infrastructure	1.6	7.0	2.7
Positive reference to assessments	1.6	-	3.6
Negative reference to assessments	3.0	-	-
N	61	43	112

Difference in total media coverage, between countries: χ^2 =53.38 (df=2)
Difference in negativity: total: χ^2 =2.24 (df=2), Nor vs Swe: χ^2 =0.91 (df=1), Nor vs Fin: χ^2 =0.29 (df=1), Swe vs Fin: χ^2 2.21 (df=1)

Source: Media Systems, News Content, and Public Perception of Political Reality, content analysis 2009. The frames are based on an absent/present coding and do not sum up to 100%. Entries are percentages of n.

Concerning the total number of coded news stories about education, the difference between the three countries is vast. Finland (112) has more news stories about education than Norway (61) and Sweden (43) *combined*, and the total national variation is

significant: (), p<.001. Following the theory of agenda-setting (McCombs & Shaw 1972), all else being equal, Finns have greater opportunities to be aware of issues of education during this period. Finland also has the greatest proportion of negative news stories about education (25%), followed closely by Norway (21.3%). In Sweden, the proportion of negative news stories is smaller (14%).[6]

The news content has further been divided according to two different news frames: first, news stories including some sort of criticism of or credit to current education policies and, second, news stories including some sort of criticism of or credit to the educational infrastructure. In this way, a distinction is made between frames related to the *content* of education (teaching, policies, etc.) and frames related to *physical properties* of the education system (buildings, locations, etc.).

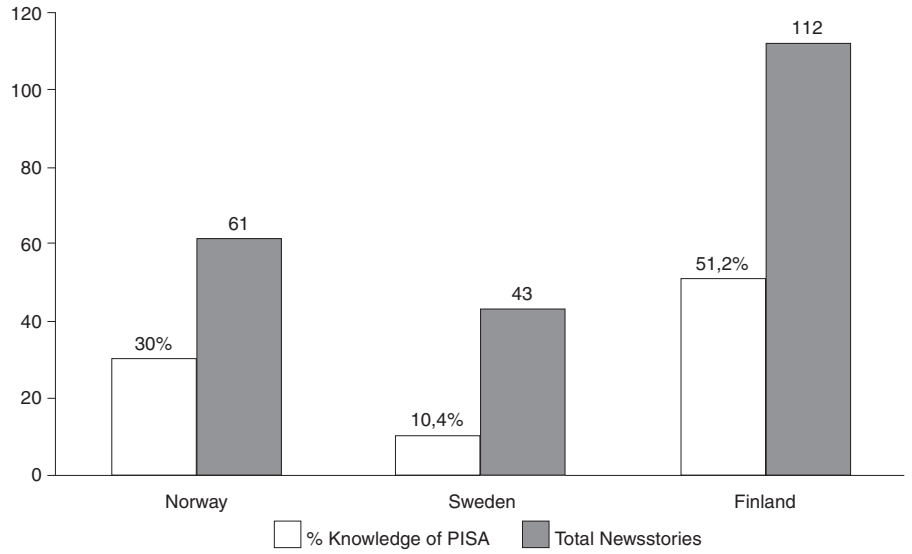
The most striking difference in the table is the comparatively high number of negative news stories concerning the educational infrastructure in Finland (21.4%), compared to Norway (6.6%) and Sweden (2.3%). Finland has the fewest news stories including criticism of education policies (11.6%), and it turns out that most of the negativity is non-policy related. Norway (18%) and Sweden (16.3%) have more negative news items on education policies. News stories including giving credit to education policies were more prevalent in Sweden (11.6%) and Finland (9.8%) than in Norway (3.3%).

These variations are interesting, as they support the view of a negative bias in news production (cf. "news criteria"). In the absence of negative stories on education policies, Finnish journalists focus on negative aspects related to physical properties of the education system. This is opposite to what occurred in Norway, where most of the criticism is directed at education policies. Sweden emerges as a somewhat intermediate case. There is less focus on educational issues in the media, and the frames appear to be more balanced. Further, in spite of few observations, the data indicate greater focus on international achievement tests in Norway and Finland than in Sweden during our sampling period. While there were more negative (3.3%) than positive (1.6%) "assessment-frames" in Norway, there were only positive stories referring to assessments in Finland (3.6%). Sweden has no references whatsoever. Are Norwegians and Finns therefore more aware of PISA than Swedes are? In Figure 1, the total number of news stories on education and public awareness of PISA is presented.[7]

Although this is not a bivariate statistical relationship, Figure 1 reveals a graphically neat picture in which media coverage on education goes hand in hand with public awareness of PISA. More than half of the Finnish respondents could identify PISA, as could approximately one third of Norwegians, while only one in ten of the Swedes were able to do so. With more news stories about education *in general*, educational issues may have been more salient in citizens' minds at the time of the survey in Finland and Norway.

Based on the survey data, it is possible to investigate whether the "neat picture" in Figure 1 holds statistically at the individual level. Does individual news exposure increase the probability of being aware of the PISA tests? In Table 2, awareness of PISA is the dependent variable in two logistic regression models for each country. Respondents were asked how much news they consumed from various sources, including those analysed in the content analysis. There are single categories for news on PBS and commercial TV, and one general category for newspapers. As awareness of PISA obviously can be traced to factors such as level of education, socio-demographic control variables are introduced in Model 2 (see Appendix 1 for coding and descriptive statistics).

***Figure 1**. Total Number of News Stories on Education and % knowledge of PISA*



Source: Media Systems, News Content, and Public Perception of Political Reality, content analysis & survey 2009.
Difference in total media coverage, between countries: χ^2 =53.38 (df=2)
Difference in PISA knowledge, between countries: χ^2 = 388.02 (df=2)

***Table 2.** Knowledge of PISA by News Consumption, Logistic Regressions (Stata 11, pweight applied)*

	Norway		Sweden		Finland	
	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
Newspaper exposure	0.076	0.086	0.278***	0.294***	0.260***	0.228***
PBS news exposure	0.242***	0.294***	-0.042	-0.093	0.102*	0.105
Commercial TV news exposure	-0.399***	-0.348***	-0.103	-0.032	-0.198***	-0.196***
Female (dummy)		-0.659***		-0.633***		-0.276*
High school		0.946**		0.487	0.509**	
University etc.		2.117***		1.363***		1.524***
Age		-0.274***		-0.098		-0.066*
Age squared		0.003***		0.001		0.001*
Constant	-0.811	3.570	-2.936	-1.442	-0.941	0.011
	(0.275)	(0.907)	(0.383)	(1.391)	(0.271)	(0.780)
Observations	962	962	982	982	977	977
Pseudo R-squared	0.040	0.149	0.019	0.060	0.032	0.107

*** p<0.01, ** p<0.05, * p<0.1.
Entries are unstandardized coefficients, robust standard errors in parentheses.
Constant: Correct answer on knowledge question of what PISA measures.
Source: Media Systems, News Content, and Public Perception of Political Reality, survey 2009.

The results in Table 2 reveal mixed relationships between individual news exposure and awareness of PISA. Reading newspapers has a positive effect in Sweden and Finland, and watching news on the public broadcaster (PBS) has a positive effect in Norway

and (weaker) in Finland. Interestingly, watching news on the commercial broadcaster has a *negative* effect on awareness of PISA in all countries (significant in Norway and Finland). This could either indicate that the commercial TV stations present less news stories about education, or it could imply that there are some unmeasured characteristics of citizens who watch a great deal of news on commercial TV that explain why they are less aware. Most important in Table 2 is that the significance of news consumption still holds after controlling for socio-demographic background (Model 2). Especially important in this sense is level of education, which also significantly explains the probability of being aware of PISA. The fact that the news coefficients remain significant suggests that there are *independent* relationships between news exposure and awareness of PISA. Hence, H1 (The more news citizens consume, the more likely they are to be aware of the PISA tests) is supported positively for PBS news and newspapers, but negatively for commercial TV. This *differentiation effect* will be further discussed in the final section.

PISA Effects on Public Opinion?

Does awareness of PISA matter? This section looks at whether awareness of PISA influences public opinion on education. Respondents were asked how they perceived the "quality" of their national education system ("What's your opinion about the state of education in [country] nowadays?"). Respondents answered by choosing a number between 0 (extremely bad) and 10 (extremely good). In addition to awareness of PISA and news consumption, the expectation is that answers will be dependent upon political/ideological considerations. Sympathy for the main left (social democratic) and the main right (conservative) party in each country is measured. Respondents answered by choosing a number between 0 (strongly dislike) and 10 (strongly like).

While the political factor seems most obvious, several other factors are also crucial and should be taken into account in any study of public opinion. For instance, previous research has revealed factors such as perceived government performance and personal experience of welfare services in explaining variation in public opinion (Huseby 2000; Kumlin 2004; Nannestad & Paldam 1994). Further, concepts of "cognitive abilities" have gained considerable attention in the research on public opinion (e.g. Converse 1964; Milner 2002; Rose & Pettersen 1999; Zaller 1992). The logic is simply that the agenda-setting function (volume, breadth and prominence) cannot work if citizens are not interested in and/or simply do not expose themselves to news or other relevant information. Ignorance simply violates potential PISA effects at the outset. In the regression models, controls for such factors, in addition to socio-demographic variables, are therefore included (see Appendix 1 for operationalizations).

The hypotheses were that awareness of PISA influences the effect of media exposure (H2) and political considerations (H3) on attitudes towards education. As already shown, news consumption explains the probability of being aware of PISA, both positively and negatively. Thus, the expectation is that awareness of PISA will moderate public opinion differently according to news source. Political sympathy is also crucial because citizens probably view the PISA assessments differently according to how they view the politics of education. Those who are critical of PISA would be influenced differently than those who embrace the test. The empirical implication is that a straightforward regression analysis including all relevant variables is insufficient. The effect of being aware of PISA on public opinion risks losing explanatory power because the effect is pulled in different directions:

e.g. citizens critical of PISA are more positive, while citizens embracing PISA are more negative. The empirical strategy is therefore to construct a "quasi-experiment" where two regression models are compared. The first model is a straightforward regression including all relevant variables (awareness of PISA, news consumption, political sympathy, age, gender, education, political attentiveness and evaluations of welfare performance in education [see Appendix 1 for variables, coding and descriptive statistics]). The limitation of the first model is that any potential "PISA effect" is treated independently of other factors. However, recall that the expectation was that awareness of PISA would influence the effect of news consumption and political sympathy. In the second model (PISA interaction), interaction terms between the main explanatory variables (news consumption and political sympathy) and awareness of PISA are included. By doing this, potential effects of the main explanatory variables are dependent upon awareness of PISA. Respondents who were not familiar with PISA simply receive the value 0 in each equation. Hence, we have a "quasi-experimental" situation in which responses of all respondents are compared with responses of those who are familiar with PISA. If the direction and/or strength of the main determinants change between the clean model and the PISA interaction model, this is interpreted as a "PISA effect".

In Table 3 regressions for evaluations of education system are presented.

Table 3. *State of Education Nowadays, OLS regressions (Stata 11, pweight applied)*

	Norway		Sweden		Finland	
	Clean Model	PISA Interaction	Clean Model	PISA Interaction	Clean Model	PISA Interaction
Newspaper exposure	0.003	0.055	0.081	0.056	0.162**	0.190**
* Knowledge of PISA		-0.260**		0.308		-0.057
PBS news exposure	-0.039	0.008	0.087	0.149**	-0.048 -	0.029
* Knowledge of PISA		-0.170		-0.485***		-0.044
Commercial TV news exposure	-0.100*	-0.112	-0.053	-0.072	0.048	0.063
* Knowledge of PISA		0.110		0.044		-0.022
Left party sympathy	0.269***	0.236***	0.173***	0.175***	0.106***	0.086**
* Knowledge of PISA		0.108**		-0.003		0.042
Right party sympathy	-0.011	0.024	0.102***	0.103***	0.079***	0.077**
* Knowledge of PISA		-0.138**		-0.023		0.006
Knowledge of PISA (dummy)	0.079	1.307**	0.088	0.151	-0.024	0.191
Political attentiveness	0.040**	0.050***	0.054***	0.051***	0.013	0.014
Welfare evaluations	0.130***	0.122***	0.102***	0.101***	0.099***	0.099***
Female (dummy)	-0.154	-0.174	0.157	0.151	-0.124	-0.129
Education (dummy, basic school as ref)						
High school	0.525*	0.505*	0.302	0.298	0.148	0.150
University etc.	0.650**	0.665**	0.125	0.120	0.190	0.203
Age	0.007	0.006	-0.025***	-0.027***	-0.001	-0.001
Constant	1.066	0.848	2.170	2.239	4.496	4.377
	(0.497)	(0.515)	(0.510)	(0.517)	(0.432)	(0.515)
Observations	838	838	851	851	767	767
R-squared	0.220	0.242	0.121	0.131	0.152	0.155

*** p<0.01, ** p<0.05, * p<0.1.

Entries are unstandardized coefficients, robust standard errors in parentheses.

Constant: What's your opinion about the state of education in [country] nowadays? 0-Extremely bad – 10-extremely good.

Source: Media Systems, News Content, and Public Perception of Political Reality, survey 2009.

As expected, measuring awareness of PISA independently (clean model) does not reveal any significant effect. In the clean models, commercial TV exposure in Norway (negative sign) and newspaper exposure in Finland (positive sign) are the only significant variables measuring news consumption. Most of the political variables are significant. In Norway, sympathy for the main left party increases positive evaluations of the education system, while support for main right party is negative (but insignificant). In Sweden and Finland, both political variables are positive and significant, but coefficients for sympathy for the main left party are strongest.

In the PISA interaction models, there are two coefficients for each of the main determinants. The upper coefficients measure those respondents who are *not* aware of PISA, while the lower coefficients measure whether those who are aware of PISA differ from those who are not aware, i.e. lower coefficients measure differences from upper coefficients.

In Norway, the coefficient measuring newspaper exposure does not change from the clean model for those respondents who are not aware of PISA, but the effect becomes significantly negative for those who are aware of the test. Hence, being aware of the PISA tests in Norway leads to more negative opinions the more one reads newspapers. Even though there are similar negative signs for PBS news exposure and commercial TV news exposure, these differences are not significant. In Sweden, there is a clear change for PBS news exposure. Being insignificant in the clean model, the coefficient becomes significantly positive for those who are not familiar with PISA, but significantly negative for those who are aware of the tests. Hence, increased exposure to PBS news leads to more positive attitudes if you are *not* aware of the test, but more negative attitudes if you are aware of it. The opposite tendency occurs for newspaper and commercial TV exposure, but none of the coefficients are significant. In sum, these findings indicate an increase in negative evaluations of the education system among those who consume certain news sources *and* are aware of PISA, even when controlling for relevant individual characteristics related to cognitive abilities, evaluations of welfare performance, and socio-demographic factors. The observed changes between the two models support H2 (*Awareness of PISA influences the effect of media exposure on attitudes towards education*). In Finland, the changes from the clean model to the PISA interaction model are minimal, and the Finnish case therefore does not support H2.

The political factors are profound in the Norwegian case. While the significant positive effect of having sympathy with the main left (social democratic) party is significantly positive in both the total sample (clean model) and among those who are not aware of PISA (upper coefficient in PISA interaction model), it is even stronger among those who are aware of the test (significant positive increase compared to those who were not aware of the test). Further, sympathy for the main right party (Conservatives) is still insignificant among those who were not aware of PISA (upper coefficient), but becomes significantly negative among those who were aware of the test (lower coefficient). Hence, left–right polarization is stronger among those who are aware of the test than those who are not. Being aware of PISA increases political polarization in Norway. This finding is in line with the argument above: PISA effects are pulled in two opposite directions because political sympathies influence how one evaluates the education system. When respondents are aware of PISA, positive evaluations increase among those who have sympathy for the main left party, while negative evaluations increase among those who have sympathy for the main right party. Thus, H3 is supported in the

Norwegian case (*Awareness of PISA influences the effect of political considerations on attitudes towards education*). There are no similar changes in the Swedish and Finnish cases, and consequently H3 is only supported in the Norwegian case.

Discussion

The aim of the present article was to contribute to the ongoing debate on how PISA tests influence news media and public opinion. International achievement tests have recently become fashionable, and scholars argue that the tests have a potentially vast influence on educational governance (Elstad & Sivesind 2010; Grek 2009; Rautalin & Alasuutari 2009; Takayama 2008). Such tests have also been popularized in the news media (Elstad & Sivesind 2010; Grek 2009), and arguments have been posed that public opinion on education is influenced by such a focus (Elstad 2010).

The findings provide some support for the claim that PISA tests influence the news media and public opinion, but also point out the important limitations of such claims. First, it was found that consumption of certain news sources (mainly PBS TV and newspapers) contributed to explain the probability of being aware of PISA, but also that certain sources had the opposite effect (mainly commercial TV). This finding indicates a *differentiation* effect (cf. e.g. Norris 2000; Zaller 1992), in which different kinds of news media emphasize different kinds of news, and in which different kinds of individuals consume different kinds of news. In line with differentiation, two – not mutually exclusive – explanations are therefore proposed. On the supply side, the findings suggest that commercial news media place less emphasis on educational issues than do PBS and/or newspapers. Commercial news media are often said to focus more on scandals, conflict and other negative aspects of politics. Although PISA fits such characteristics – at least in low-performing countries – the findings here indicate that this has not been the case.

On the demand side, the findings suggest that there are some unmeasured characteristics of people who consume commercial news versus those who consume PBS and/or newspapers that make the latter group less aware of educational issues. The estimations in Table 2 controlled for socio-demographic variables, which are "objective" characteristics of individuals. One possibility is therefore that more "subjective" characteristics of individuals consuming commercial news are important. Perhaps those who consume commercial news simply have less overall interest in educational issues than those who consume PBS and/or newspapers. One characteristic that could estimate the potential of such a claim is employment or *type* of education. For instance, it could be that high-educated individuals working in the educational sector have a stronger preference for PBS news than for commercial news, while high-educated individuals working in business and trade have a stronger preference for commercial news.

Concerning the second part of the empirical analyses, it was found that being aware of PISA could influence the "effect" of news consumption on public opinion in a negative way in Norway and Sweden, but not in Finland. Hence, in Norway and Sweden, individuals who are aware of PISA express more negative evaluations of the national education system the more they consume certain sources of news. This is interesting in a Nordic perspective, because these two countries have performed significantly weaker on the PISA tests than Finland has. Comparing only three countries, it is not possible to test statistically whether there is a general relationship between PISA performance

and public opinion, but these findings nevertheless suggest such a relationship. Future research should therefore try to replicate this study in a sufficient number of countries, allowing for collective statistical tests.

Finally, in Norway it was found that attitudes are more politically polarized among people who are aware of PISA than among those who are not aware. Compared to the average respondent, sympathy with the Labour party goes hand in hand with more positive evaluations of the education system. And those Labour sympathisers who are aware of PISA are even more positive. The opposite was found for those who express sympathy with the Conservative party. This finding supports the claim that PISA is associated with "neo-liberal" education policies (Ahonen & Rantala 2001; Telhaug et al. 2006), and suggests that supporters of the Conservative party view PISA as a "quality control" of the education system, while supporters of the Labour party are more sceptical of the tests. Again this finding is interesting in a more "general" sense. No change in political polarization was found in Sweden and Finland. These countries have performed better than Norway, and again the findings postulate the expectation that "PISA effects" will be stronger in weak performing countries. The hypothesis for future research is therefore that political polarization will be greater in low-performing countries.

Seeing the two empirical parts in relation to each other, some potential limitations of this explanation should be outlined. When the data were sampled, Norway had a centre–left government dominated by the Labour (social democratic) Party. Both Sweden and Finland had centre–right governments (with participation of the conservative parties) at the time of sampling. An earlier study of public opinion on education in Norway, Sweden and Finland revealed that political polarization increases at the mass level when Norway and Sweden have social democratic governments. Polarization in questions of education appears to be less profound in Finland (Fladmoe forthcomming). In a similar vein, other scholars have highlighted instances of political conflict in Norway and Sweden over issues of education at the elite level during the past couple of decades, also before international assessments became fashionable (e.g. Helgøy 2006; Imsen 1998). Education historians have also argued that, in the post-WWII era, the Norwegian and Swedish education systems have generally been more politically disputed than the Finnish (Telhaug et al. 2006).

Taking such considerations into account, the conclusion based on the present empirical material is nevertheless that variation in public opinion on education is influenced by PISA, but that this is dependent upon individual news consumption. Further, if there is political controversy over educational issues, awareness of PISA can boost polarization at the mass level. Thus, the present results provide empirical support for the popular view that international achievement tests have a *potential* of influencing news media and public opinion. As democratic governance is dependent upon public support, the implication is that we can expect political conflict over issues surrounding education to increase in countries performing below expectations.

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Notes

1. See the annual report Education at a Glance; www.OECD.org.
2. A good example is the title of the front page of Die Woche, 7 September 2001: *"Schule macht dumm"*
3. Twelve factors explaining newsworthiness (Galtung and Ruge 1964): Frequency, threshold, intensity, unambiguity, meaningfulness, consonance, unexpectedness, continuity, composition, reference to elite nations, reference to elite people, reference to persons, and reference to something negative
4. Note that all survey methods result in some sort of biases. For instance, and not surprisingly, respondents' degree of "Internet use" is higher in the web than in the telephone surveys. But differences concerning knowledge are minimal (Strabac & Aalberg 2011).
5. This is not a representative sample of all news companies, but rather a strategic sample on the basis of media structure. The outlets represent different kinds of media characteristics, and they are among the biggest in their respective category in terms of circulation.
6. However, the difference is not statistically significant $p<.05$ (χ^2).
7. Question wording: "PISA is a comparative measure organized by the OECD, carried out to several countries including [country]. Do you know what PISA measures?" (a-Economic development, b-Air pollution, c-Education, d-Health care, e-Don't know)

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Table A1. *Variables, coding and descriptive statistics, media systems survey*

Variable name	Survey	Norway			Sweden			Finland		
		Mean	St.dev.	n	Mean	St.dev.	n	Mean	St.dev.	n
PISA (dummy)	PISA is a comparative measure organized by the OECD, carried out in several countries including [country]. Do you know what PISA measures? (1 – Economic development, 2 – Air pollution, 3 – Education, 4 – Health care)									
	1 = Correct answer			**300**			**104**			**512**
	0 = Incorrect answer			**700**			**896**			**488**
Newspaper exposure	Read your daily newspaper	**3.579**	**1.536**	**983**	**3.723**	**1.510**	**996**	**3.997**	**1.370**	**995**
PBS news exposure	Watch <Name of PBS main news programme>	**3.157**	**1.467**	**979**	**2.773**	**1.447**	**990**	**2.908**	**1.438**	**981**
Commercial TV news exposure	Watch: <Name of commercial channel main news programme>	**3.274**	**1.407**	**983**	**2.799**	**1.389**	**988**	**2.711**	**1.283**	**989**
Female (dummy)	E3: Are you…									
	1 = female			**507**			**496**			**516**
	0 = male			**493**			**504**			**484**
Education (dummy)	*Nation-specific level of education collapsed into three categories* E1: What is the highest level of education you have achieved?									
	- Basic School (reference category)			**95**			**81**			**147**
	- High school			**422**			**465**			**363**
	- University etc.			**466**			**436**			**485**
Age		**41.518**	**13.216**	**1000**	**45.155**	**13.641**	**1000**	**45.741**	**13.385**	**1000**
State of education nowadays	F2: What's your opinion about the state of education in [country] nowadays? (0-Extremely bad – 10-extremely good)	**4.817**	**1.959**	**966**	**4.727**	**2.008**	**953**	**7.370**	**1.497**	**987**
Left party sympathy	Norway:C10: Arbeiderpartiet Sweden: C11: Socialdemokraternae Finland: C10: Suomen Sosiaalidemokraattinen Poule	**5.267**	**2.670**	**921**	**4.491**	**2.856**	**919**	**4.215**	**2.796**	**911**

Right party sympathy	Norway: C14: Høyre Sweden: C15: Moderaterna Finland: C15: Kansallinen Kokoomus	**4.565**	**2.569**	**908**	**4.491**	**3.265**	**909**	**4.812**	**3.005**	**911**
Political attentiveness	*Two questions collapsed, alpha: .911 (Norway), .915 (Sweden), 909 (Finland)* On a scale from 0 to 10 how closely do you follow domestic and international politics in the news? Zero means that you do not follow it at all and 10 means that you follow it very closely. Firstly …	**9.664**	**4.806**	**993**	**9.127**	**4.819**	**989**	**11.175**	**4.878**	**993**
	C1: Domestic politics (0-Do not follow it at all – 10-Follow it very closely)	5.104	2.573	995	4.774	2.539	991	5.782	2.593	997
	C2: International politics (0-Do not follow it at all – 10-Follow it very closely)	4.568	2.442	994	4.349	2.478	990	5.383	2.507	993
Education system – welfare evaluations	*Answer options in F4-F6 reversed: high value = positive evaluation. F4-F7 collapsed, alpha: .588 (Norway), .698 (Sweden), .644 (Finland)*	**12.377**	**2.451**	**988**	**12.488**	**2.741**	**992**	**12.278**	**2.941**	**854**
	F4: The [country] education system favours children growing up in a family with an academic background (1-Strongly agree – 5-Strongly disagree)	2.819	.949	998	2.871	1.014	1000	2.899	1.102	953
	F5: The [country] education system favours girls (1-Strongly agree – 5-Strongly disagree)	3.314	.903	999	3.518	.853	999	3.114	1.028	966
	F6: The [country] education system favours children with an ethnic [country] family background (1-Strongly agree – 5-Strongly disagree)	3.215	.890	997	3.194	.921	996	3.051	1.042	900
	F7: The [country] education system is taking good care of all children independent of their family background (1-Strongly agree – 5-Strongly disagree)	3.215	.890	997	2.901	.983	997	3.204	1.068	971

Note: Numbers in boldface applied in analyses.

Source: Media Systems, News Content, and Public Perception of Political Reality, survey 2009 (Strabac & Aalberg 2009)