



## Comparing antecedents for Norwegian, Swedish, and Finnish youths' agentic beliefs in informal online learning

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### Abstract

Technology has become an ever-present factor in virtually every contemporary situation, and digital media has gained a significant role in the lives of young people. This article explores and compares the antecedents for agentic beliefs in informal online learning amongst young people in Norway, Sweden and Finland. The promotion of such agentic beliefs in informal online learning is an important task for school systems that seek to prepare young people for responsible citizenship, capable of directing their own lives and supporting others. A sample of 3045 urban Finnish, Swedish and Norwegian students in general study programs (15–17-year-olds) participated in a cross-sectional questionnaire. Structural equation modelling was used for analysis. We discovered that the patterns in some of these relations were astonishingly similar in Sweden, Norway, and Finland. In each of these countries, online culture, defined in terms of free choice and self-actualisation by using internet, is positively associated with agentic beliefs and with time online. A duality in school and internet orientation demonstrates that the educational systems in these three countries face challenges to build bridges between the attitudes of youth and the emphasis on knowledge found in traditional educational subjects. Furthermore, the agentic beliefs of youngsters in these three countries differ depending on the degree to which youths value education.

**Keywords:** agentic beliefs; informal online learning; Finland; Sweden; Norway

### Introduction

The term *youth* refers to the transitional age between childhood and adulthood (Gillis, 2013). This transition is often associated with experimental behaviour and social adjust-

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ments at school (Capuzzi & Gross, 2014). Jenkins (2006) claims that youth are unprecedentedly empowered to participate in media communication because of their access to online networks and digital interactivity. From the education perspective, internet access opens a range of learning opportunities beyond the scope of formal schooling (Means, Toyama, Murphy & Baki, 2013). However, opportunities given are not the same as opportunities taken. The crucial issue is the degree to which youths take advantage of these informal online learning opportunities, to exercise agency in informal online learning. Arguably, bolstering learners' digital skills and digital self-confidence will become increasingly important for achieving educational objectives.

Some researchers presume that influential informal pedagogies operate in youths' everyday participatory online cultures, which can empower youths through "greater agency, opportunities to participate in networked communities, and access [to] a wide range of resources to support knowledge building and collaboration" (Loveless & Williamson, 2013, p. 13). Agentic beliefs in informal online learning refer to youths' attitudes associated with agency in online learning in informal settings. Antecedents are presumed and preceding conditions that we believe are related to agentic beliefs in online learning. This study explores and compares antecedents of youths' agentic beliefs about online learning by applying structural equation modelling to a sample of 3045 youths from Norway, Sweden, and Finland. These youths were aged 15–17. Digital media plays a significant role in the lives of Nordic youths (Syvertsen, Enli, Mjøs, & Moe, 2014), and we did not expect differences between the countries, for theoretical reasons. Some have speculated that the identities of youths are in flux because they are in a transitional stage in life (Gillis, 2013; Stald, 2008; Loveless & Williamson, 2013). It is possible that digital media trends help promote transnational cultural tendencies, which over time can lead to a greater convergence of youth cultures (Jenkins, 2006). Many young people in this age group expressed a desire to discover their own identity and find their own way in life (Gardner & Davis, 2013). They also tend to express ideals of self-definition, independence and expectations of satisfaction (Wearing, McDonald & Wearing, 2013). In terms of youth's multifarious online activities, Ito et al. (2010) claim they are mainly friends- and interest-driven. This kind of self-directed engagement in participatory digital cultures (Jenkins, Purushotma, Weigel, Clinton, & Robison, 2009) might affect how young people understand learning, the role of formal schooling in their lives (Loveless & Williamson, 2013) and the relationship between their informal online learning experiences and the purposes, processes and content of formal education (Buckingham & Willett, 2013; Greenhow & Lewin, 2015).

Youths construct their self-image and idea formation by digitally interacting with their peers. Digital media also represent an opportunity for imagination and criticism, and in the epistemological spirit of Appadurai (1996), some scholars have termed these experiences *youthscapes* (Maira & Soep, 2004). Participation in these digital communities is thought of as a space for self-realisation and self-definition, reinforced by the increasing self-determination that comes with age. In this article, we define this phenomenon as

*online culture*, defined in terms of free choice and self-actualisation by using the internet (abbreviated online culture). The extent, frequency and intensity of youths' digital interaction and communication could indicate the development of a new participatory youth culture. At the same time, youthspheres are an expression of global cultural trends that create a platform for distinctive elements that contribute to distinguishing one individual from another and the tendency to follow in others' footsteps. Converging trends in youth culture have a firm foothold in digitalised youth cultures within northern Europe, which make Swedish, Norwegian and Finnish youths an appropriate sample for studying the antecedents of agentic beliefs in informal online learning.

The purpose of this article is to explore and compare the antecedents of agentic beliefs in informal online learning amongst young people in Norway, Sweden and Finland. Using structural equation modelling (SEM), we estimate the strength of the relations (path coefficients) between the presumed antecedents and agentic beliefs in informal online learning. Structural equation modelling is a general and powerful multivariate technique that includes specialized versions of other analytic methods as special cases. Structural equation modelling allows path analyses, which hypothesizes causal relationships among variables and test causal models through linear equation systems.

## **Theoretical framework**

The study integrates two strands of theories dealing with youths' agentic beliefs in learning: (1) the theory of school socialisation and (2) the theory of youths' internet values.

### **Theory on school socialisation**

School socialisation is associated with learners' sense of belonging at school (Cemalcilar, 2010). The aim of schooling is to expand learners' capacities to perceive, participate and develop greater agency so that they can face the challenges of life. Learning school-related content, social skills and competencies are important life skills (Deming, 2017; Hanushek, Schwerdt, Wößmann & Zhang, 2017). Social skills include taking general agentic beliefs and agentic beliefs on informal online learning into account. However, regarding the former, schools enable learners to learn the competencies they will need in future education and workplace situations (Elstad, 2016). Students listen to the educator's explanations, read defined study material and rehearse the material by carrying out specific learning tasks from the teacher (Hopmann, 2007). Educational research has shown that instructional qualities are related to learners' cognitive activation and achievement, and this theory provides a plausible explanation for the learning mechanisms involved (Baumert et al., 2010; Kunter et al., 2013). To some extent, the content of traditional school subjects and transnational ideas of globalised social development have converged (Rogers, 2014). For example, large-scale international surveys have promoted this kind

of convergence across national borders, whilst international organisations have influenced conservative school systems by focusing on basic skills like literacy and numeracy (Wößmann, 2015). However, the school model remains an important premise for how designing institutional arrangements (Hopmann, 2007). This model requires institutionalised interactions. For instance, learners could, to a certain extent, appreciate schools' values, which legitimise schools' curriculums and educators' authority. We expect that learners' school appreciation and learners' school associations are positively related to their agentic beliefs in online learning outside schools. Further, we expect that learners' school appreciation is positively related to their associations with the school as an institution.

### **Theory on learners' online culture in terms of free choice and self-actualisation**

Youth is the period between childhood and adult age (Ogden, Carroll, Kit, & Flegal, 2014). Youths have various attitudes towards the values upon which the traditional educational model is constructed (Wearing et al., 2013). Youths' different genres of participation (Ito et al., 2010) in digital environments foster a preference for the internet, representing free choice and self-actualisation. This internet preference supports individual choice, personal freedom, self-expression and self-actualisation (Inglehart & Oyserman, 2004). Proponents of connectivism (Siemens, 2005) argue that internet activities are important sources for acquiring the relevant knowledge, skills and attitudes for functioning intelligently in the 21<sup>st</sup> century (Frånberg, Dunkels, & Hällgren, 2011). These activities are *nodes* in youths' networked learning ecologies, in which school is only one of a multitude of meaningful learning arenas.

Whilst some learners value the ideas upon which the traditional school model is constructed (Cemalcilar, 2010), others wish that their work at school could more closely align with their individual interests (Erstad & Sefton-Green, 2013). For some learners, the traditional model conflicts with their self-determination and independent choices. Youths' ideas of personal autonomy are supported by physical maturity and are related to by ideas spread through digital media (Capuzzi & Gross, 2014). International trends towards increased self-realisation and through an enhanced material standard of living, also affect how youths perceive the power they can exert over their own lives (Brake, 2013). This illustrates that the appreciation young people have for agentic beliefs is an indicator of their future roles as full-fledged citizens in adult society (Benedicto & Luz Morán, 2007).

The traditional school model, therefore, needs adjusting to incorporate another factor that will affect schools' future challenges: agentic beliefs in informal online learning. Agentic beliefs in informal online learning are related to expectations of how students, educators and school leaders should exercise their roles in school society. As a result, some schools will encourage designing a learning process that emphasises what a young person wants to learn. This type of progressive school may place greater emphasis

on working methods than academic achievement (Vavik & Salomon, 2015). In such cases, the individual's perception of agentic beliefs would be the core concern. There are, however, relatively few progressive schools like this in Nordic countries, and the reference population of students in this study attend schools that are closely aligned with the traditional school model. Therefore, we asked youths, between the ages of 15 and 17, about their experience at school and the society in which they grew up, has affected their appreciation of the values associated with progressive schooling ideals.

Online tools facilitate online conversations and interactions amongst youths (Selwyn, 2011). Young people use social media in multiple ways (Ito et al., 2010; Anderson, Hattakka, Grönlund, & Wiklund, 2013). The use of social media is instantiated in youth cultures (Wortham, 2011) and is related to youth identity formation (Turkle, 2011; Gangadharbatla, 2008; Boyd, 2010). Amongst youths, online culture generates structures that support individual choice, personal freedom, self-expression and self-actualisation (Inglehart & Oyserman 2004).

Youths perceive the value of their activities in terms of their ability to help them make sense of the world and participate in discussions. This varies from person to person, and some youths engage more directly in school-related activities than others. To understand and respond to youths' beliefs, it is important to explore the antecedents for their agentic beliefs in informal online learning activities. We expect that learners' access to ICT is positively related to their agentic beliefs in informal online learning. Further, we expect that learners' online culture is positively related to their agentic beliefs in informal online learning. We also expect that access to ICT is positively related to learners' online culture.

## **The context**

From a European perspective, Norway, Sweden and Finland form an interesting enclave since each is considered a Nordic welfare community that emphasises youth self-determination. Alongside an interest in digital media, schools in these countries form a core institution in the lives of adolescents (Blossing, Imsen, & Moos, 2014). At 15 years of age, young people in Norway, Sweden and Finland make active choices regarding their future education. In the Nordic educational model, this is the age that young people are first sorted into grades or streams (Blossing et al., 2014). Opportunities to enter the workplace are limited for youths between 15 and 17 years old, and so upper secondary education is the customary alternative.

Norway, Sweden and Finland have some similarities in the design of their educational systems. For instance, their systems are all based on ideals of equality (Blossing et al., 2014). In addition, they have comparable structural features, such as universal compulsory 9- or 10-year schooling and a relatively moderate proportion of private schools. Conversely, there are also some differences between schooling in these countries.

Finnish learners have consistently performed in the top range of school achievement amongst European countries, whilst Norwegian and Swedish learners have shown more mediocre performance (OECD, 2016). Some commentators attribute this to the high status of educators in Finnish society (Sahlberg, 2014) and the correspondingly lower status of educators in Swedish and Norwegian society. As such, Finnish educators can call on a stronger position of authority whilst conducting their work as educators (OECD, 2014). However, Finnish learners are low in school satisfaction while Norwegian and Swedish students express higher school satisfaction (OECD, 2014). Furthermore, on measures of student engagement, Finland ranks below the international average on levels of student interest. Another difference is the degree to which computers are used at school. Finnish students use computers somewhat less often than Swedish and Norwegian learners (European Commission, 2013, pp. 104–107).

The Nordic school model accommodates a continuum of differences. The national authorities in Norway and Sweden have implemented a policy of strengthening learning in the academic areas covered by large-scale international surveys (Blossing et al., 2014). As such, these international surveys have shaped traditional academic subjects, such as maths, science and reading (Rogers, 2014; OECD, 2016). To strengthen students' learning outcomes, the Swedish and Norwegian authorities asked educators to increase cognitive activation in classrooms (Blossing et al., 2014). Maths and science, however, are not subjects that youths are intrinsically motivated to study (Eccles, 2014). The prospective importance and high expectations of these academic subjects have widened the gap between learners' personal fields of interest and the content offered by schools. Some researchers (Erstad & Sefton-Green, 2013) have entertained hopes that computers can help bridge learners' interests and the content offered by schools. There are no theoretical reasons to expect differences in the paths of the theoretical model in the Norwegian, Swedish and Finnish samples.

## Research questions

This study aims to explore and compare the antecedents of agentic beliefs in informal online learning amongst Swedish, Norwegian and Finnish youths. The overarching research questions addressed by this study were: How do youths' values and perceptions of school relate to their agentic beliefs in informal online learning in these three Nordic countries? How do these youths' online culture, which is defined in terms of free choice and self-actualisation by using the internet, relate to their agentic beliefs in informal online learning in these three Nordic countries? How does these youths' online culture relate to their scholastic orientations (school appreciation and school associations) in these three Nordic countries?

## **Empirical investigation**

### **Sample**

An empirical cross-sectional study was completed with 60 schools in Norway (20 schools), Sweden (16 schools) and Finland (24 schools) between February and March 2013. We chose schools located in or close to urban areas, as urban teens are most likely to have full broadband access. Thus, they were more likely to have the opportunity to engage in the same spectrum of digital activities and develop similar digital habits in all three countries. 479 Finnish students, 1058 Norwegian students, and 1508 Swedish students voluntarily participated, totally 3045 general study students.

### **Research ethics**

We applied ethical standards required by the national authorities of Norway, Sweden and Finland. First, the study's participants were informed of the project's aims and scope. Second, informed consent was obtained from each participant. In addition, the learners were informed that they could skip questions on the questionnaire whenever they wanted. Third, the participants' privacy and confidentiality were assured since no personal or identifiable information was collected. The code key for the names of the schools was stored in a separate document. All contact prior to data collection happened only between one of the authors and the contact person at each school. As a result, the respondents' anonymity was guaranteed. None of the students declined to take the survey.

### **Instruments**

The learners answered a questionnaire on different aspects of school situations and propositions about schools. We had to translate the questionnaires from Norwegian to Finnish and Swedish before distributing them. We double-checked these translations by running the questionnaires by our professor colleagues in Finland and Sweden. Once the learners completed the paper-based survey, the data were coded into Statistical Package for the Social Sciences (SPSS). The work was done within a classical test theoretical paradigm in which psychological constructs and items (see table 1) were contextualised through a set of individual questions. We used professional standards for developing multi-item constructs (Haladyna & Rodriguez, 2013). Students were asked to respond to questions on a six-point Likert scale, where the options were: Strongly disagree (1), Disagree (2), More disagree than agree (3), More agree than disagree (4), Agree (5) and Strongly agree (6). The constructs were: agentic beliefs in online learning (abbreviated as agentic beliefs), online culture, perceived school associations (abbreviated as school assoc.), positive attitudes induced by the internet (abbreviated as positive attitudes), and school appreciation (abbreviated as school apprec.). A final construct was an exception, as this question asked respondents to record the number of hours they spend using Information

and Communication Technology (ICT) at school (abbreviated as time online). In table 1, we present concepts and indicators, plus descriptive findings (mean and standard deviation) for each indicator for each country separately. We found only small variations in these results between Norway, Sweden and Finland.

*Table 1. Concepts, indicators, means and standard deviations in each country sample*

	Finland	Finland	Norway	Norway	Sweden	Sweden
<i>Concepts and indicators</i>	<i>Mean</i>	<i>Standard deviation</i>	<i>Mean</i>	<i>Standard deviation</i>	<i>Mean</i>	<i>Standard deviation</i>
<b>Agentic beliefs</b>						
<i>Online experiences strengthen my ability to participate in discussions.</i>	3.23	1.29	3.40	1.40	3.44	1.27
<i>The net helps me develop good study habits.</i>	3.13	1.14	3.01	1.24	3.03	1.15
<i>My thoughts and opinions are taken seriously online.</i>	3.16	1.16	3.10	1.22	3.03	1.18
<i>The net enables me to better understand the world around me.</i>	4.26	1.18	4.47	1.13	4.30	1.17
<b>Online culture</b>						
<i>I would prefer to learn wherever and whenever it suits me, rather than in school according to a common curriculum.</i>	2.18	1.07	1.81	1.02	1.99	1.03
<i>School learning is of minor importance for my future life.</i>	2.05	1.12	2.00	1.19	1.98	1.08
<i>Come to think of it, the internet is now more important than school.</i>	2.78	1.39	2.24	1.33	2.74	1.34
<b>School associations</b>						
<i>Meaningful content</i>	3.50	1.11	4.23	1.10	4.09	1.09
<i>Learning</i>	4.45	1.01	4.59	1.07	4.48	1.06
<i>Engaged participation</i>	3.81	1.19	4.03	1.10	3.99	1.06
<b>Positive attitudes</b>						
<i>Respect for others</i>	2.15	1.07	2.41	1.27	2.30	1.15
<i>Honesty</i>	2.01	1.01	2.38	1.26	2.27	1.16
<i>Good behaviour</i>	1.91	1.00	2.12	1.11	2.07	1.07
<b>School appreciation</b>						
<i>I hate school (reversed)</i>	4.33	1.28	4.58	1.26	4.45	1.22
<i>I enjoy school learning</i>	4.09	1.08	3.85	1.13	4.15	1.05
<b>Time online</b>						
<i>How many hours per day do you spend online at school?<sup>2</sup></i>	3.18	1.41	3.67	1.42	3.46	1.43

<sup>2</sup> The numbers denote hours: 1= 1 hour, 2= 2 hours, 3=3 hours, 4=4hours, 5=5 hours, and 6= 6 or more.



### Analysis

The analyses were conducted using SPSS and AMOS.

*Table 2. The Cronbach alpha for each concept*

Construct	Item no.	Finland	Sweden	Norway	Total
Positive attitudes	3	.86	.85	.85	.85
School appreciation	2	.72	.66	.71	.68
Online culture	3	.72	.70	.74	.71
School associations	3	.73	.84	.82	.81
Agentic beliefs	4	.67	.70	.71	.70

The sample comprised of 3045 students after excluding those responses containing missing values. We used Cronbach alpha to assess the measurement reliability of the indicators for each of the subscales (varying in table 2 between 0.66 and 0.86, which is typically considered acceptable or nearly acceptable) (Nunnally, Bernstein, & Berge, 1967). In table 2, we present the Cronbach alpha for each construct or concept, for each country and the total sample. Confirmatory factor analysis (CFA) was used to assess factor structure. The assessments were based on the p-values for the  $\chi^2$ -statistic, root mean square error of approximation (RMSEA), confirmative fit index (CFI) and goodness of fit index (GFI). The standard criteria of  $p < 0.05$ ,  $RMSEA < 0.05$ , and  $GFI$  and  $CFI > 0.95$  were used to determine a good fit (Kline, 2015). The fit indices of the three structural models were good: RMSEA measures were about 0.03, GFIs were from .961 to .977, and CFIs were from .972 to .977. Table 3 shows the main results of the structural equation models from each country: the pathways and path coefficients. Structural equation modelling shows clear similarities between the samples. A main inference was that the pathways have a quite similar structure of loadings for Sweden, Norway and Finland.

*Table 3. Pathways and path coefficients for each country*

Pathways	Finland	Sweden	Norway
Positive attitudes→ Agentic beliefs	.07	.26	.23
School apprec.→ Agentic beliefs	.18	.33	.23
Online culture→ Agentic beliefs	.44	.50	.47
School assoc.→ Agentic beliefs	.22	.18	.12
Time online→ Agentic beliefs	.29	.26	.17
Time online→ Online culture	.18	.10	.11
Positive attitudes→ School apprec.	-.36	-.42	-.41
Positive attitudes→ School assoc.	-.07	-.19	-.17
School apprec.→ School assoc.	.64	.56	.59
Positive attitudes→ Online culture	.21	.18	.23
School apprec.→ Online culture	-.46	-.55	-.58

## Discussion

The purpose of this article was to explore and compare the antecedents of agentic beliefs in informal online learning amongst young people in Norway, Sweden and Finland. As shown in table 3, the main conclusion is that the path coefficients of the structural models (which explain antecedents of agentic beliefs in informal online learning in Sweden, Norway and Finland) are astonishingly similar. However, we cannot say that digital youth cultures in Norway, Sweden and Finland have converged over time. This study was only a snapshot of a possible direction for development, and longitudinal research is required to determine long-term trends in youth cultures. One avenue of further research could investigate the dynamics of youth cultures through qualitative approaches.

Another main conclusion is that youths in all three countries displayed a duality in school orientation and internet orientation (see the pathway school appreciation → online culture in table 3). This duality in their values demonstrates that their education system faces challenges in bridging youth's attitudes induced by the internet and values induced by traditional schooling: school appreciation and school associations (see the pathways positive attitudes → school appreciation induced by the internet, and positive attitudes induced by the internet → school association in table 3).

Students' agentic beliefs in informal online learning create tensions between traditional learning and expectations for reform within schools. Within the classical school model, learners submit to what schools offer in academic content and rules for behaviour (Cemalcilar, 2010; Hopmann, 2013). In this way, the students' identities are inculcated through school (Rich & Schachter, 2012). Learners, thus, need to submit to the educators' expectations and requirements, even though the schools in Norway, Sweden and Finland also emphasise paying attention to learners' wishes and expectations. There has been a great deal of documentation on young people's motivational orientation changes towards school during adolescence: intrinsic motivation was reduced whilst external motivation increased (Eccles, 2014).

To some extent, schools' provisions have shifted to better accommodate youth interests, for example, through study options (at lower-secondary schools, for example), study programmes (arts and sports) and special offerings that closely relate to youths' free-time activities (multiple outward-bound courses at Nordic folk high schools, for instance skiing). Despite schools' efforts to implement these measures, part of being a learner is submitting to adult expectations and demands to make an effort in their academic work. This particularly applies to higher education preparatory programmes. Such learners may feel a desire for self-fulfilment through agentic beliefs in informal online learning whilst continuing to value school as an institution because success there will increase their future value in the workplace. Oftentimes, the learners who follow this type of academic programme—those who are the object of this article's study—will examine factors that explain youth agentic beliefs in informal online learning. The traditional schooling model, with its expectation that learners must submit to expectations created by an external authority clashes with other school models that emphasise independence

and the free use of digital resources (online culture dominance). This finding is also an avenue for further research.

There were several limitations to this study. Particularly, this type of analyses (based on parsimonious modelling) has limitations from a conceptual perspective. Multiple factors are related to human behaviour, and thus, we need more in-depth studies on the complexities of young people's use of digital resources. We acknowledge these limitations and argue that they can inspire future research.

In all three countries, we found stronger relationships between online culture dominance and agentic beliefs in informal online learning than between school-culture dominance (school appreciation) and agentic beliefs in online learning (see table 3). Many researchers have previously predicted the demise of traditional schooling based on the assumption that media-related developments will revolutionise current thinking about education (Papert, 1980; Tapscott, 1998; Prensky, 2001; Thomas & Brown, 2011). An expected educational revolution is based on the idea that 21<sup>st</sup>-century learners have experienced a shift from the world of writing to the world of images, and from the world of books to screens (Kress, 2008). These learners have acquired a new set of skills, preferences and knowledge, all of which are fundamentally different from those rooted in the traditional print-based world. So far, however, this has not happened.

However, media developments have affected education. Political expectations of school modernisation through ICT, with the expectation that allocated funds will be used in accordance with politically created agendas, has led to perceived pressure on school staff to employ ICT as a teaching aid. Norway and Sweden are in a distinctive position regarding the actual use of ICT in the school, whilst Finland differs in its relatively modest use of ICT (European Commission, 2013). However, we did not find substantial differences in the average of ICT use at school in Norway, Sweden, and Finland. Despite the contextual difference between Swedish and Norwegian schools on the one hand, and Finnish schools, on the other hand, we found no substantial difference in youths' orientations.

The value young people place on agentic beliefs in informal online learning and their desire for internet are related to those areas that have traditionally been determined by state control of content. Some claim that youth can learn a great deal from engaging in games, interacting with peers on social media, processing information for personal interest, consuming media for entertainment and feeding their curiosity by coproducing or combining digital content (Prensky & Gee, 2006; Boyd, 2010). Most of this kind of activity is powered by interest and supported by peers (Ito et al., 2013), and thus feeds into the broader tendencies of youth to hang out, mess around and geek out (Ito et al., 2010). Agentic beliefs in informal online learning can contribute to renewing young people's understanding of how they control their own lives and help others.

More self-determination, however, is a double-edged sword. Many of the decisions that young people make often lead to unfavourable consequences, self-discipline problems (Arnesen, Elstad & Christophersen, 2017). Another example is that a quite large

proportion of youths in Finland, Norway and Sweden drop out of upper-secondary education. However, more research is needed in this area. Drop-out is a mark of weakness within an internationalised labour market, in which there is heavy competition for jobs that do not require higher education. The trends, however, are ambiguous. Some young people who drop out of upper-secondary education can recover their position through a career-based working life (Markussen, 2014). Equally, favouring informal online learning and self-determination creates a dilemma for those individuals who cannot cope with such freedom and make choices that do not benefit them in the long term (Elstad, 2008). Regarding these processes of change, some people place their trust in the renewal of the school system by enabling learners to learn self-regulation techniques and skills (Mooij, 2009). While this is difficult to carry out, some promising attempts have been made based on libertarian paternalism, which nudges learners to align themselves to a fruitful trajectory (Sunstein & Thaler, 2008). However, we cannot avoid the conclusion that we need more research on how to provide more space for agentic beliefs in informal online learning within the normal context of school. Our analysis shows that tensions exist between different learner-cultures in Nordic school systems in terms of how to adapt traditional school appreciation to the values of freedom of choice and self-realisation. Learners hold these values dearly, and the question is how priorities, beliefs and positive attitudes lead to actions (Hopmann, 2013). This has not been studied extensively and requires more research.

Another limitation of this study is the use of self-reported questionnaire data. The subjective component of such data is undeniable. However, we have no reason to suspect a systematic bias in our sample. While the schools varied in size, it was not practicable to couple our survey data with indicators for value added during the period prior to the data collection. This study's methodological approach made it difficult to draw clear conclusions without first acknowledging the need to further validate our findings. Some of the path coefficients are so small that we must urge caution. However, our basic theoretical model is based on such a strong research foundation that we do not believe the statistical relations highlighted in this study are coincidental or full of spurious connections.

There is no simple solution to the challenge of bridging traditional school and the world of youths (Hopmann, 2013; Vavik & Salomon, 2015). Some indications of changing trends are seen in young people's subject choices for upper-secondary education. Heavyweight subjects, such as the most advanced courses in maths, physics and chemistry, are losing ground and popularity in favour of subjects that many young people regard as easier (Mullis & Martin, 2014). For instance, there is a long-term trend towards weakening maths skills in Norway and Sweden. This may be an indication that the most logical and sequential academic subjects have poorer prospects at the time when young people have a choice in which subjects they select for a portfolio. Students get overall grades for their performance in school. If companies or universities look at overall grades, then students could feel they would put themselves at a disadvantage taking challenging classes

when their peers do not. The contents, processes and objectives of informal online learning are radically different and greatly preferred by youth over regular, disciplined, intellectually and future-oriented school-based learning (Oblinger & Oblinger, 2005; Ito et al., 2010).

If young people have a heightened appreciation for self-realisation and self-identity, agentic beliefs in informal online learning can form part of an explanatory chain, creating new prospective educational discourses (Bernstein, 2000; Hopmann, 2013). There are those who hope that digital opportunities will help open the walls of the school and contribute to sorely needed education reform (Erstad & Sefton-Green, 2013). Some also predict that the nature of schooling can be dramatically changed if learners are set free from the terms and conditions previously attached to learners (Papert, 1980). However, it is an irreversible fact that young people in Nordic countries participate in cultural exchanges through digital media.

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