

Ask your mother! Teachers' informational authority roles in information-seeking and evaluation tasks in health education lessons

Tuula Nygård, Faculty of Education, University of Oulu, Oulu, Finland,

Contact: tuula.myllyla-nygard@oulu.fi

Noora Hirvonen, Information Studies, University of Oulu, Oulu, Finland

Sari Räisänen, Oulu University Teacher Training School, Faculty of Education, University of Oulu, Oulu, Finland

Riitta-Liisa Korkeamäki, Faculty of Education, University of Oulu, Oulu, Finland

Abstract

This paper contributes to the pedagogical discussion on how to promote critical thinking among adolescents in modern media environments. It argues that teachers play an essential role in guiding students' assessment of and decision between credible information sources. The study was carried out among eighth-grade health education teachers and students in a secondary school in Finland. Nexus analysis was used as a theoretical lens with which to analyze lesson observation data and teacher interviews. The findings indicate that teachers moved fluently between the informational authority roles of a cognitive authority and a trustee. Moments of perplexity in which teachers were not able to act in these informational authority roles created tension in the classroom; however, they also promoted diversified learning.

Keywords: cognitive authority, health education, information-seeking, nexus analysis, trustee

Introduction

In this study, we examined teachers' informational authority roles: positions that enable teachers to share their knowledge and guide students towards other information sources (Tuninetti, 2018). These roles were examined empirically in situations where Finnish eighth-grade students sought and evaluated information in groups during health education lessons. In Finland, the National Core Curriculum for basic education (FNBE, 2014) includes information-seeking and evaluation competencies as part of the learning goals connected to multiliteracy and 21st-century skills. It stresses that these goals should be considered in all school subjects. Furthermore, the FNBE (2014) highlights student-centred and collaborative learning as additional basic education goals.

In the 1980s, Giroux (1988) stated that teachers were no longer just information mediators but played an equal role in reflecting, knowledge building, and meaning-making processes with their students (see also Freire, 1998; Suoranta, 2005). In addition, the development of technology has changed learning environments; consequently, new practices are required, which challenge both the teachers and students. The need to teach students information-seeking and critical evaluation skills has led to a shift in the role of the teacher from a conservative authority to a co-creator of knowledge, with an emphasis on tutoring, challenging, evaluating, and teaching (Alexandersson & Limberg, 2005).

Critical thinking and learning enable students to form their own interpretations of phenomena (Mezirow, 1997). These are desirable skills in all school subjects (Mezirow, 1997). As health information is a complex and constantly changing field, it offers an excellent context for critical reflection and may thus promote transformative learning (Mezirow, 2009; Taylor, 2009). Enhancing students' critical thinking skills in the complex context of health education is a demanding task for health education teachers. Hence,

studying teachers' authority roles in information-seeking and evaluation situations provides means to develop teacher training in this regard.

Teachers' Authority Roles

The concept of authority does not necessarily mean power or domination, but it may encompass different forms (Macleod, MacAllister, & Pirrie, 2012). According to Weber's (1925/1947) authority classification, traditional authority is grounded in position—that is, teachers are authorities because they are teachers (Pace & Hemmings, 2007). Traditional authority is legitimated by rules and orders, regardless of the person's abilities or charisma (Aguilera & Vadera, 2008). Wilson (1983), in turn, discussed the concept of the administrative authority of a person who has the authority to command others. Freire (1970) found that teachers who possess banking authority were more likely to force students to be oppressed than independent, self-regulated learners.

The traditionally authoritarian teacher is a knowledge divider, while students are passive recipients (Bingham, 2008; Freire, 1970). According to Stroupe (2014), the conservative notion of teaching describes the teacher in a dominant position instructionally, epistemically, and practically. Students' opportunities to take on the role of epistemic agents—that is, to make the class the collective knower—are prevented in knowledge construction, meaning-making, and idea-sharing (Stroupe, 2014).

According to Shulman (1987), teachers who possess professional authority have both subject knowledge and pedagogical content knowledge. Teachers' knowledge and ability to achieve pedagogical goals have also been highlighted as the basis of pedagogical authority (Grant, 1988; Metz, 1978; Pace, 2003, 2006; Pace & Hemmings, 2007), although it has been suggested that pedagogical authority should primarily be based on trust, love (Harjunen, 2011), affection (van Manen, 1991), and students' critical understanding (Harjunen, 2011) instead of power and students' inner sense of sanctions (van Manen, 1991). Charismatic

teachers bear an authority that is generated by their individual characteristics, which attract other people and evoke prestige (Pace & Hemmings, 2007). Wilson (1983) noted that charismatic authority occurs when “We may be so impressed by the person, so attracted or mesmerized by him that we are prepared to believe whatever he says” (p. 25).

The present study concentrates on two concepts related to teachers' informational authority roles: (1) cognitive authority, which refers to an information source that influences one's thinking (Wilson, 1983), and (2) trustee, which describes a position to guide one towards credible information sources (Jessen & Jørgensen, 2012).

The Teacher as a Cognitive Authority

Cognitive authority, a concept originating in library and information science, refers to an information source that is thought to be trustworthy and believable and that influences thinking (Wilson, 1983). Cognitive authorities can be individuals, like friends, idols, doctors, and teachers, as well as published texts, such as books, magazines, and web pages (Rieh, 2005). Cognitive authorities are recognized as proper because they are considered to be credible, worthy of belief, and knowing “what about what” (Wilson, 1983, p. 10).

Cognitive authority differs from administrative authority because the latter is founded on position or hierarchical dominance (Huvila, 2013). In contrast, the former is based on experience, expertise, education, and the reputation of the source (Wilson, 1983). However, although individuals may have special knowledge or professional experience of a topic, their expertise is not necessarily acknowledged (Wilson, 1983). According to Wilson (1983) people are typically recognized as cognitive authorities at least in the sphere of their own experience; ordinary, rational individuals may have such competence that their opinions are valued.

The assessment of cognitive authorities is not separate from social context.

Traditional classroom roles, with the teacher lecturing and students positioned as passive

receivers of information, support the teacher's position as a cognitive authority (Stroupe, 2014). However, previous studies indicate that cognitive authority is produced on a case-by-case basis through discussions (McKenzie, 2003), and people consider interaction, tools, and activities in social action (Sundin & Francke, 2009). Metzger, Flanagin, and Medders (2010) found social and group-based means to be important in assessing credibility, and thus, information credibility, authority, and trust are validated by social processes.

People in the same social groups tend to trust similar information sources (Hultgren, 2013). According to Macedo-Rouet, Braasch, Britt, and Rouet (2013), teachers promote students' information-seeking and evaluation skills by designing information-seeking tasks, as inexperienced information seekers may be confused when presented with a large range of information sources (Swanson, 2007). It can be argued that when students' skills develop, they no longer have to rely on their teacher as an information source, that is, as a cognitive authority (Kress & Selander, 2012).

The Teacher as a Trustee

In the present study, we use the notion of a trustee to describe a position in which one guides others towards credible information sources (Jessen & Jørgensen, 2012). Trustees are people who often act as a type of authority, as they are able to provide both trustworthiness and expertise in evaluating information and establishing credibility (Jessen & Jørgensen, 2012). Trustees do not have to be experts on every topic, but they are able to confirm others' perceptions of information credibility when needed (Jessen & Jørgensen, 2012). In school contexts, students often consider teachers to be trustees, especially when choosing credible information sources (Pettinghill, 2006). Students may be less critical when relying on teachers' guidance regarding the credibility of sources and refrain from using their own judgement (Pettinghill, 2006).

Previous studies indicate that the teacher's role in supporting information-seeking is critical since students often lack expertise when seeking and assessing credible information, especially on the internet (Eastin, Yang & Nathanson, 2006; Hargittai, Fullerton, Menchen-Trevino, & Thomas, 2010). Heinström and Sormunen (2019) found that, in information-seeking tasks, students appreciate teachers' scaffolding and close guidance regarding credible information sources, that is, the teacher's actions as a trustee.

Competence is one of the main factors of teachers' credibility, and competence-based trust is constructed on the knowledge and skills needed to conduct a specific assignment (Berti & Di Battista, 2011; Chory, 2007). Teachers' goodwill and caring with respect to students are important building blocks for credibility and trust, but without knowledge and skills, trust remains inadequate (Tschannen-Moran & Hoy, 2000). Teachers' competence in the subject matter is intertwined with their pedagogical skills (Smith & Neale, 1989). According to Shulman (1986), a skilled teacher is able to choose a certain pedagogical approach according to the situation.

Context and the Aim of the Study

The present study examined teachers' informational authority roles in information-seeking and evaluation tasks during health education lessons. In Finland, health education has been included in the national core curriculum as an independent subject for basic education in Grades 7 to 9 since 2001. The subject of health education in Finnish is *terveystieto* (health knowledge). In this context, "knowledge" includes theoretical and practical health knowledge, which are learning outcomes of health literacy along with individual critical thinking (Paakkari & Paakkari, 2012).

According to the core curriculum (FNBE, 2014), the purpose of health education is to enhance students' skills in different areas of health literacy, such as seeking, constructing,

evaluating, and utilizing health information. Phenomena related to health and well-being are studied in age-appropriate ways as students age, and their thinking skills develop.

By exploring discourses and practices emerging in health education lessons among teachers and students, we asked

1. What kind of authority roles did the teachers exhibit when students were seeking and evaluating information in groups during health education lessons?
2. What enabled the teachers to be positioned in these authority roles?

Methodological Perspective

Nexus analysis was chosen as the methodological perspective for examining classroom interaction and teachers' pedagogical practices because it allows for the exploration of social action taking place in group work situations (Scollon & Scollon, 2004). Nexus analysis provides the means to understand mediated actions within the nexus of practice and then enables the identification of changes in the nexus (Scollon, 2001; Wohlwend, 2009). In this context, "change" refers to the moment when established practices are disrupted or placed under pressure to make changes (Goffman, 1959). The actions are framed by semiotic ecosystems: health education lessons consist of various phases of planning, teaching, and learning, but the school environment, with its daily schedules, rules, and boundaries, is simultaneously related to these ecosystems (Colliander, 2017; Scollon & Scollon, 2004).

Data Collection and Analysis

Data collection took place in one Finnish secondary school in spring 2017. It was conducted through observations of two eighth-grade classes during health education lessons. The lessons were video- and audio-recorded, and written observation notes were also taken. The data collection focused on teachers' ($N = 2$) actions and roles when students ($N = 39$) worked in groups (Table 1). Only two teachers and their students were chosen to participate

in this study because the purpose of the study was to conduct an in-depth analysis of dense data to reveal the complexity of the studied phenomena (Given, 2008; Geertz, 1973). Before the observational period, the researchers and the teachers met and agreed on the details of the data collection. The teachers were interviewed after the data collection. The average length of each interview was one hour, and the duration of the digitally recorded observation data was approximately 18 hours. The teachers involved in the study determined the duration of the group work, but the researchers' expectations and views were also considered.

Table 1

Research Design

Class	N	Data Collection Tools and Sessions	Group Work Theme	Media
1	17 students, 1 teacher (T1)	Video cameras, voice recorders, mobile phones 3 × 45 min lessons	Chronic and infectious diseases	PowerPoint
2	22 students, 1 teacher (T2)	Video cameras, voice recorders, mobile phones 2 × 45 min lessons	Diets	Handwritten posters, PowerPoint, Keynote-presentation tool

The analysis began during the data collection. The researchers briefly talked with the participants while observing the group work and shared their views after every data collection session. In the next phase of analysis, the observational data and interviews were transcribed and coded with the qualitative analysis software NVivo. The analysis continued with the research groups' joint discussions; the aim was to identify teachers' authority roles in particular social actions.

The concepts of discourse in place, interaction order, and historical body—which, in nexus analysis, are seen to intersect with one another in the heart of social action—were used to guide the analysis. To elucidate how the key theoretical concepts were used to guide the analysis, an analysis table is included in Appendix A. The analysis concentrated on the teachers' actions and discussions with the students.

To explore discourses in place, the situated mediational means—for instance, language, information sources, such as textbooks and webpages, and learning environments (Dressler, 2018; Scollon & de Saint-Georges, 2013)—were focused on. Interaction order, referring to the social arrangements among the participants and their positions in the action (Scollon & Scollon, 2004), was examined by focusing on common behavioural rules that guided interaction in the classroom. To enlighten teachers' historical bodies—which were influenced by their past and present life experiences as well as the curriculum—the school building, its infrastructure, and the entire school system and its participants were scrutinized. (Blommaert & Huang, 2009; Scollon & Scollon, 2004).

All names presented in the present study are pseudonyms. The teachers participating in the study are labelled as T1 and T2, according to the classes in which they worked (Table 1). Before the data collection, written informed consent was requested from all the students, their parents, and the teachers.

Nexus of Practice

Our research site was a medium-sized, Finnish public secondary school, where the two subject teachers had taught health education for approximately 10 years. Both teachers had two teaching subjects: handicraft was the first, and health education the second. The study took place in two eighth-grade classrooms that received three additional weekly hours of music education compared to regular eighth-grade students. The learning environments were rather traditional, where the students sat in rows, and the teacher's desk was at the front

of the classroom. During some health education lessons, Class 1 worked in a computer classroom, where the students sat next to one another at long tables. The teachers did not spend much time sitting behind their desks but mostly mingled amongst the students, helping and guiding them.

For the group projects, both teachers chose themes included in the health education curriculum and scheduled for spring 2017, when the data collection took place. The chosen themes required information-seeking and evaluation; the tasks could not be accomplished solely with common sense. Moreover, both teachers had previously utilized group work as a learning method for these themes. They instructed the students to decide freely what type of output they would create. In Class 2, most groups produced handwritten posters, while in Class 1, students preferred digital technology and created PowerPoint presentations.

Interestingly, this division was aligned with the teachers' actions: at the beginning of the group work, T1 used a computer for all the arrangements, while T2 wrote instructions on the chalkboard and did not switch the computer on during the entire lesson. Furthermore, students in Class 1 had a shared laptop and also worked in a computer classroom. In contrast, in Class 2, students mainly worked in a traditional classroom and used iPads for information-seeking. In accordance with the researchers' wishes, the teachers did not restrict students' choices of information sources. The unlimited use of sources was intended to encourage students' information-seeking abilities and the cognitive authorities of young people today.

Results

In the observed lessons, the teachers and students usually interacted closely. The students generally behaved well, and there were no significant distractions in the lessons. The teachers had several discussions running at the same time with many students or student groups. Therefore, classroom interaction appeared fragmentary, especially because the school

schedule and arrangements strictly regulated periods of work. The lessons started and ended at predetermined times, and the learning spaces were fixed.

The chosen working methods and tools also regulated the semiotic ecosystem (Scollon & Scollon, 2004): independent studying versus teamwork, and books and other written texts as information sources versus digital information-seeking tools. This frame defined social action in the classes examined as part of the present study and resonated with the motivation of the participants. Some students, for instance, had great difficulty with information technology, and, on occasion, nearly an entire lesson was spent resolving technical problems. Most of the time, this was not, however, due to a lack of technical skills but to the malfunctioning of the school's wireless network or troubles with the digital learning environment.

The teachers' goals concerning the learning task often appeared to differ from those of the students. In the interview, T1 mentioned that in the group work, "I hoped that all of these diseases, which I chose . . . that we would have time to seek and share information." In comparison, T2 emphasized the learning results and efficient use of time:

Yes, in some situations, [group work] is suitable. I have used it for ages in this nutrition section, diets, because it is the most ingenious way. [Nutrition] will be scaled from comprehensively . . . So, in a sense, it will be carried out on the basis of their information-seeking. (T2)

Students, in turn, appreciated quick and easy ways of working and getting good grades: "But hey, no worries! Only school! Eva, this is only about our final grade of health education in the [comprehensive school] leaving certificate. Never mind!" (Student Mina).

The students had no time to waste because T1 had reserved three 45-minute lessons for the group work, and T2, two 45-minute lessons (Table 1). Therefore, some of the groups

had to finish their work outside of school hours, alternating between the traditional face-to-face studying methods and digital learning environments.

Observing the social action taking place in the classrooms, we came to focus particularly on three kinds of situations: (1) situations where students relied on their teacher's knowledge as a cognitive authority, and the teacher was able to provide answers to the students' questions; (2) moments of perplexity where the teacher and the students tried to construct knowledge together; and (3) situations where the teacher did not appear to have knowledge of the subject matter but guided students towards credible information sources as a trustee. These situations represent informational authority roles in this study.

The Teacher as a Cognitive Authority.

The group work in both classrooms started with information-seeking, allowing the students to use their health education textbooks and internet sources. T1 also gave the students health brochures and magazine clippings related to group work topics, which they used diligently. In addition, the students were allowed to visit the nearby library to seek information, but none of them utilized this option. Some online information sources were less recommended than others. In the interview, T1 stated, "Well, we talk about Wikipedia, that it is not necessarily a credible information source, but certainly, I think myself that it helps you to get to the topic. I use it myself, too."

In the group work, the students preferred information sources that were not only understandable but also recommended by the teacher. During the data-gathering, we asked students which information sources they had used, and the answers varied from friends to serious internet sources, such as the Duodecim Health Library. In one case, we noticed the students reading Wikipedia but not listing it as their source. When asking the reason for ignoring it, the student (Mina) replied, "We read Wikipedia, but we didn't understand anything about it."

The teacher's role as a cognitive authority became visible in Class 2. The teacher had prepared a list of diets that could help the students to choose one diet to explore. In making the decision, they familiarized themselves, at least superficially, with several diets. For the purpose of such an assignment, diets and nutritional causations were scaled comprehensively, as T2 stated in the interview. As could be expected, students became confused by difficult terminology and overlapping concepts, and they were unable to resolve the matter on their own.

Lena: Is a lactose-free diet same as lactose intolerance?

T2: No. Lactose intolerance is the reason, which is why someone may choose a lactose-free diet.

Lena: I see . . .

T2: Lactose intolerance is a symptom, I mean, lactose intolerance is malabsorption of lactose, which causes flatulence and upset and so forth.

Lena: Is it . . .

T2: But a lactose-free diet is then to avoid the symptoms of the lactose intolerance.

This situation illustrates the interaction order of the classroom. The students easily turned to the teacher with their questions, who likewise instinctively sought to answer their questions exhaustively. The established roles of the teacher and students brought forth a dialogue which, as a social action, was predictable and familiar in the environment. Thus, the discourses in place with regard to information sources were not only books and webpages but also the teacher's knowledge, experience, and perceptions.

In comparison, T2 did not position himself as an information source and, consequently, a cognitive authority. He explained in the interview that students sought information "mostly from the internet. Someone looked at the textbook for some things, but,

um, from the internet.” Interestingly, T2’s students did not mention their teacher as an information source.

Although T2 did not parallelize his own contribution to the internet or even the textbook, we found that the teacher’s role was active, guiding, and informative. In the interview, T2 mentioned that, as a teacher, he is easy to approach, and both advanced and less advanced students liked to come and talk to him. T2 paid attention to social exclusion, which he understood to be the result of students ignoring and misunderstanding one another. He talked about individual moments of attention as important, as they may result in a significant change in a young person’s life later on. The teacher emphasized that he always takes his students into account, realizing this is pivotal. This moment of enlightenment was crucial in terms of the historical body of T2.

The teachers were not always able to respond to the questions easily and directly. The salient point in such situations was *how* the teacher sought to answer the students’ questions, not so much *what* they said.

Anna: Teacher 2! What is the difference between the gluten-free diet and the coeliac’s diet?

T2: Well . . . It depends on whether it is a grain protein allergy or whether it is hypersensitivity that is, you can . . . It is little like having a milk allergy or being lactose intolerant. Ergo, if you have a grain allergy, it is bad for the intestinal villi whereas if you have . . .

In the classrooms, the students called the teachers by their first names when they needed help, and the interaction between the teacher and the students was generally informal. The teachers did not use any written information sources, such as a health education textbook, to answer students’ questions but instead strove to answer from memory based on their previous knowledge, experiences, and perceptions. In such situations, the teacher’s role

was rather traditional, providing direct answers and explanations instead of guiding students towards other credible information sources.

Moments of Perplexity

Studying spaces clearly contributed to the social action. In Class 1, the computer classroom was not furnished like a traditional classroom; instead, the groups worked and sat close together at long tables. Because of this, the discussions were relatively loud at some moments, with the groups talking over and advising one another and the teacher guiding several groups at once. Yet this kind of classroom arrangement offered an opportunity for collective meaning-making. For instance, the Allergies and Digestive Diseases topic groups (Class 1) tried to work together to explain the difference between lactose intolerance and milk allergy. Some of the students understood the concept better than others, but T1 was nevertheless needed to confirm the “facts.” Eva, Mina, and Rachel were in the Allergies group, whereas Rose and Celina worked in the Digestive Diseases group.

Eva: Celina! Celina! Lactose intolerance is not an allergy!

Rose: I wrote lactose-intolerants prevent the symptoms of their allergies . . .

Mina: It's not an allergy

T1: You see, milk allergy is an allergy . . .

Eva: So, I have experience with milk allergy.

T1: After all, it is a feature of the human body, that lactose intolerance, but milk allergy is an allergy.

Rose: What can I write then? Is it a disease? Is it a disease?

Mina: I don't know. It is just that the enzyme is lacking, I don't know if it's a disease . . . is it a feature?

Rachel: Teacher! Teacher! Is lactose intolerance a disease?

In this discussion, Mina and T1 especially sought to construe the difference between these two stomach issues to other students, but the outcome was somewhat incomplete.

In some cases, obscure health questions went unsolved despite the diligent efforts of both the students and teacher. The trustworthy and credible information sources—that is, the cognitive authorities in the particular social action—did not always provide comprehensible answers, and the participants' previous knowledge was not helpful either. Nevertheless, the teachers did not act as all-knowing but instead admitted the limits of their knowledge.

Celina: Teacher! What is a combined series b of bacterial culture?

T1: (Helping another group while replying to Celina) I cannot tell what those analyses are, but probably they are for the detection of some Salmonella bacteria.

Celina: Because in here it says that the stool sample . . .

T1: Yea . . .

Celina: It may be some different thing because stool sample, culture, and a combined series b of bacterial culture . . .

T1: Something or other, I cannot say.

Celina: I am wondering whether it is worth putting it [on the slides], because I certainly don't know . . .

T1: You just put that stool sample.

Celina: Yea.

This moment of perplexity created tension in the nexus of practice. These moments evolved when the teachers were not able to act as traditional information distributors, and the social actors' (both teachers and students) knowledge construction eventually failed. The students called the teacher for help, but she was unable to provide the right answer or guidance in exploring other information sources. In this case, the students and the teacher were equally unknowledgeable of the matter. Therefore, they decided to leave the difficult detail out of the

presentation. The challenging issue remained unsolved because the topic was neither returned to nor explained.

The Teacher as a Trustee

In some situations, the teachers could use this tension and the unmet information needs of students as an opportunity to transform teaching to address problematic issues as things that can be solved, and, thus, learning may take place. In these situations, students were able to continue seeking information from another source when those already examined did not meet the information requirement and when the teacher was also unsure of the issue.

T2: Nuts and legumes consist of a lot of proteins. They provide all nutrients except vitamin B12, so you need to—

Mina: Does chicken contain vitamin B12? Or beef only?

T2: Well, I think so, but I'm not quite sure. I think beef contains more. It is worth seeking, soogle [Google] it. I'm not 100% sure.

The teacher could not give a precise answer to the students, possibly implying that the textbook did not explain vitamin B12 accurately. Instead, the teacher urged the student to check this detail on the internet. However, according to the video data, the student did not follow the teacher's advice, and no further discussions of vitamin B12 took place. This short excerpt does not highlight the teacher's role as a trustee because, even if the teacher gave direction to seek another adequate information source, the student did not follow the advice.

During a discussion with a group of students working with allergies, T1's directions appeared to guide one student's information-seeking actions.

Mina: An allergic rhinitis is a paradigm of an atopic rhinitis . . . allergy!?

Rachel: Wha-a-t?

T1: That was a complicated one. What I know it causes . . . Atopics' skin in the crooks and the corners of the mouth and around eyes is . . .

Rachel: I have then probably an atopic skin.

T1: But can an atopic get an anaphylactic shock that would be a general . . . suffocating style . . .

Mina: (reads aloud from the source) . . . develops quickly, often in few minutes . . . An allergic rhinitis is a paradigm of an atopic allergy. What is a paradigm?

T1: Ask your mother! (laughs)

Mina: My mother?

T1: Yes. She is a doctor, isn't she?

Mina: Yes, she is. It is so . . . I cannot explain, you don't understand it anyway!

T1: Is she a psychiatrist . . . Or what kind of doctor is she? But a doctor still.

Mina: She is a specialist in physiatry, and she is some psychiatric nurse as well. And she has all kinds [of training].

T1: But, after all, she is a doctor . . . but a basic physician first?

Mina: Yeah.

T1: Could she explain it then?

Mina: Well, probably, she could. Or then not. Because she surely has forgotten half of her training.

The student with the mother who was a doctor was not convinced of her mother's ability to explain complicated issues about allergies. The teacher, in turn, strongly suggested using the mother as an information source, positioning her as a cognitive authority based on expertise and the information a doctor is expected to possess. The teacher's recommendation appeared to have an impact on the student's actions because, in the next lesson, she stated, when talking about common allergies, "I asked my mother about these atopic things, so she said that an allergic rhinitis is an entirely poor example." For this student, the teacher seemed to have gained the status of a trustee because the student had followed the teacher's advice

about a credible information source. Despite her own reluctance, the student consulted her mother about complicated issues relating to the group work.

Overall, the teacher's guidance played an important role in students' choice and use of information sources. T1 provided students with a set of sources in a folder at the beginning of the group work by saying, "do always remember to write down sources. I've taken these articles from magazines [published by health authorities]. They shouldn't be hooey, as I have accepted them." T1 recommended using the information sources she had chosen and described them as credible and trustworthy. Students in this group preferred teacher-provided sources, the health education textbook, and the above-mentioned mother who was a doctor instead of internet sources. Thus, the information sources used were rather traditional, while internet sources appeared to be obscure and, therefore, more difficult to interpret.

Discussion

The results of the present study indicate that teachers switch between the informational authority roles of a cognitive authority and a trustee in situations where students are working in groups with information-seeking and evaluating tasks. Moments of perplexity, where these established authority roles were neither functional nor met the learners' needs, created tension; however, they also promoted multiliteracy and learning.

T2, in particular, was positioned mostly in a somewhat traditional role (Stroupe, 2014) of a cognitive authority, but both teachers moved fluently from one role to another according to the situation. The students relied on their teachers with a low threshold and apparently trusted in the teachers' subject content knowledge, one of the elements of teachers' competence (Shulman, 1987).

On several occasions, the students found the health education content to be challenging because the information sources they used contained contradictory or confounding information. In this regard, their information-seeking and evaluation skills were

still developing, and the teachers' guidance was needed. This finding is supported by previous studies (see Eastin et al., 2006; Hargittai et al., 2010). Students tended to construct an understanding by themselves first, but at some point, they turned to their teacher'. In accordance with previous studies, the students seemed to appreciate their teachers' close guidance and scaffolding (Heinström & Sormunen, 2019). Based on discussions with the students while working, we found they did not consider teachers to be information sources. However, based on observational data, they seemed to regard the teachers as cognitive authorities, relying on their competence, skills, and knowledge. This supports Wilson's (1983) description of cognitive authority; the information the teachers bore was found to be credible (Swanson, 2007) at least in the context of the school task.

When the teachers acted as trustees, they did not give straight answers but enabled learning by showing direction. Freire (1998) stated that teachers are enablers who create possibilities for knowledge construction. When the teachers suggested non-conventional information sources to the students, they created learning possibilities. In our study, this was clearly evidenced when the teacher guided a student in the verification of a medical detail provided by the student's mother (who was a doctor).

The teachers had professional authority (Schulman, 1987), which they utilized by recommending what they considered to be credible information sources and allowing the students to make choices based on these. The students' trust in the teachers' discretion contributed to how the students complied with the teachers' instruction (Chory, 2007). This mode of operation left room for self-regulated learning and, therefore, the development of students' self-efficacy.

The results indicate that teachers' content knowledge is crucial when it comes to informational authority roles. The students relied on the teachers' knowledge of health topics, which was apparent in situations where students needed help with the subject content. In

most cases, the teachers could answer the questions without hesitation from memory. In line with previous studies (Harjunen, 2002; van Manen, 1991), teachers embodied their teaching subject, and thus the way they saw their teaching subject and work was reflected in their students' responsiveness and learning attitudes.

In the present study, the teachers designed a learner-centred pedagogical approach focused on group work (see Macedo-Rouet et al., 2013) to promote not only the subject content but also multiliteracy, which is included in the national core curriculum for basic education as a transversal skill (FNBE, 2014). In the context of health education, multiliteracy refers to information-seeking, construction, critical evaluation, and the production of diversified texts (FNBE, 2014; Halinen et al., 2015; Hirvonen, Nygård, Palmgren-Neuvonen, Huhta, & Huotari, 2019). While working in groups, the students were obliged to perform all of the above-mentioned actions, both individually and collectively, but they also required and received the teachers' support. This is in line with Metzger et al.'s (2010) finding that social processes enable individuals to assess information credibility and cognitive authorities.

In this study, T1 provided students with pre-selected materials, stressing their credibility. Students used the teacher-provided leaflets eagerly, which may be explained either by the relevance of these information sources or by the fact that teacher-provided sources are appropriate to use in school tasks. The students may have found the information in the leaflets to be "proper" and worthy of being believed, which is how Wilson (1983) defined the recognition of cognitive authority. On the other hand, they may have relied upon these information sources because the teacher handed them out, and it is assumed that teachers provide only study material that is sufficient. This aspect is in line with Pettinghill's (2006) notion that students are inclined to trust the information sources their teacher provides instead of evaluating sources critically themselves. The school's interaction order influenced

the students' choices of credible sources because some information sources were less recommended than others. The students had already been taught to avoid using web pages like Wikipedia as an exclusive source during the previous school years, or at least to omit such sources from their reference lists.

Both teachers in this study were readily available to the students, and discussions between teachers and students were fruitful. Hence, the interaction in the classrooms was open, and the teachers were easy to approach. The way the teachers were positioned in their authority roles determined the way they acted in specific situations. As Scollon and de Saint-Georges (2013) stated, the aggregation of social actors' mediated actions in the course of life shape behaviour and ways of working.

According to our analysis, the historical body of the teacher influenced the class atmosphere and the teachers' approachability. Teachers' good intentions and benevolence towards students generated trustworthiness, which preceded trust (Berti & Di Battista, 2011). Trust builds over time, and it is based on positive experiences during interactions (Rousseau, Sitkin, Burt, & Camerer, 1998). Through the trust process, a teacher can gain the status of a trustee who guides students in choosing and using credible information sources (Jessen & Jørgensen, 2012). Freire (2000) viewed mutual trust as a consequence of dialogue based on love, humility, and faith. Pedagogical love, in turn, is established by the teacher's faith in his or her students' abilities to learn and, further, the teacher's presence and closeness (Määttä & Uusiautti, 2012). Therefore, some teachers may be inherently more approachable than others and can more easily enter into unstudied interaction with students.

Presumptions about how to act in a school environment guided both teachers' and students' actions. For instance, the tools used in information-seeking varied; the students were encouraged to use teacher-approved sources and even visit the library instead of using Google on their phones. Although teachers do use phones for information-seeking in their

free time, at school, they encourage students to use traditional, safe, and credible information sources and technological tools. This may not be due to a lack of trust in digital sources or students' abilities to evaluate information, but rather to customary school practices and the teacher's historical body as a teacher, influencing his or her chosen working methods and tools.

Students' historical bodies, in turn, are willing to add digitality to their toolkit and everyday schoolwork. This is one reason why teachers' work is in a transitional stage. Transformations may appear as epoch-making and the sudden or cumulative re-orientation of points of view that leads to a new *habit of mind*, which Mezirow (2009) calls a habitual way of thinking, feeling, and acting. In transformative learning, the teacher's role is to support students in reflecting critically on assumptions and to evaluate sources and consequences of habits of mind critically (Mezirow, 2009). This transformation process also pertains to teachers through classroom discourses and their new ways of teaching.

This study had some limitations. The studied classes were music classes, which are special classes for musically talented adolescents. It is evident that these two classes with their health education teachers do not represent the average secondary school learning community in Finland, but they did offer a vantage point from which to study teachers' informational authority roles. The observation method itself limits the findings because the data-gathering is time-consuming, and the amount of data expands rapidly. The presence of researchers and especially video cameras in the classrooms were disturbing to some extent, which changed the nexus of practice. However, in nexus analysis, change is considered as one of the main activities of analysis. The data were sufficient to identify students' information-seeking and evaluating practices, as well as the teachers' role in the choice of information sources.

Conclusions

This study highlights the need for schools to adapt to the demands of our contemporary information society because the amount of information available exceeds individuals' ability to control it. In addition to traditional literacy skills, such as reading and writing, schools are responsible for teaching children and adolescents critical thinking skills, and multiliteracy in various media environments. Therefore, we must examine the role of teachers in developing students' critical thinking and, specifically, enhancing their ability to evaluate information credibility. In health education teacher training and in-service training, multiliteracy should be emphasized so that teachers can strengthen their expertise and thus enhance their students' agency in the digital world.

The present study sheds light on information-seeking and assessment methods in health education tasks as identified through our observation data and teacher interviews. However, further research is needed regarding teachers' own perceptions of how to enhance multiliteracies in health education and how digitality could be utilized appropriately in educational settings. Additionally, future research should look into how teachers perceive their role as trustees and the impact of trust on schoolwork and the class atmosphere.

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