LEADING FOR DIGITALIZATION: EXPLORING THE LEADERSHIP PERSPECTIVE

Marcia Håkansson Lindqvist, Mid Sweden University
Fanny Pettersson, Umeå University
Sweden

Abstract

This paper focuses on how school leaders understand digitalization and the digital competences needed for leading digitalization in Swedish schools. In this small study, 31 school leaders at the end of their studies in the Swedish national professional development program for school leaders answered a survey, mainly based on open questions, regarding professional development and leadership for digitalization. In the analysis, Dexter's four categories of (a) setting the direction, (b) developing people, (c) developing the organization, and (d) developing teaching and learning, were used to bring order in the data. The results show that school leaders see digitalization as a wide and complex concept including technical, pedagogical, administrational and organizational challenges at all levels of the school organization.

Introduction

There has been a rapid growth of digital technologies in today's knowledge society (Selwyn & Facer, 2014). However, they have been slower to gain foothold in schools (Livingstone, 2012). In recent years, Swedish schools have invested heavily in digitalization, e.g., 1:1, laptops and Information and Communication Technology (ICT) systems (Håkansson Lindqvist, 2015; Hansson, 2013; Grönlund, 2014; Grönlund, Andersson, & Wiklund, 2014). Despite this, how these efforts have affected teaching and learning continues to be somewhat vague (National Agency for Education, 2009, 2013, 2016).

Every third year the National Agency for Education (2009, 2013, 2016) evaluates the implementation and use of digital technologies and digital competences in Swedish schools. In the reports from 2009 and 2013, results showed that investments and access to digital technologies have increased while pedagogical development and digital competences appear to have fallen behind (2009, 2013; see also the Swedish Schools Inspectorate, 2012). According to such results, the report also points at the need for a strategic leadership for promoting the uptake and use of digital technologies (National Agency for Education, 2009, 2013).

In 2016, the National Agency for Education reported on similar conclusions, pointing out a necessity for professional development in the area of digitalization for all levels of Swedish schools. Here, the role of the school leader and the schools leader's competence to strategically lead for digitalization and pedagogical development appears to be a key factor. Moreover, although the number of school leaders who report having sufficient digital competence to lead the strategic work with digital technologies had increased since 2009, one third of all school leaders stated that they do not

have sufficient skills (National Agency for Education, 2016). Thus, there appears to be a need for supporting school leaders' strategic work with digitalization.

At the same time, studies on school leadership and digitalization conducted in the Swedish context seems to be few (Håkansson Lindqvist, 2015). The few studies at hand, contribute to the idea that the leadership is important for the strategic implementation of digital technologies for teaching and learning in Swedish schools (Petersen, 2014, 2016; Svensson, 2015). Here, there appears to be an emerging need for professional development of school leaders' digital competence for leading digitalization in schools (cf. Grönlund et al., 2014; Håkansson Lindqvist, 2015; Hylén, 2011; Pettersson, 2017), as well as for further research on the school leader perspective on digitalization in school.

With this short backdrop, the aim of this paper is to explore how school leaders understand digitalization and digital competences needed for leading digitalization in Swedish schools. The following research questions are posted:

- How do school leaders understand what is meant by digitalization in their profession as school leaders?
- What professional development seems to be needed to support the work in leading for digitalization?

The Swedish Context

In order to adapt the education system to the requirements of the digitalized knowledge society, national efforts for promoting the uptake and use of ICT in Swedish schools have been implemented for many years (see Håkansson Lindqvist, 2015; Jedeskog, 2007; Tallvid, 2015). Despite a long history of efforts in ICT in Swedish schools, the first political proposal for supporting strategic leadership for leading for digitalization in schools was presented in 2002 (Ministry of Education, 2002). These efforts have involved a variety of new challenges in all levels of the school system. Recent reports show that while accessibility to technology in Swedish schools is said to be good, the technology is not being used as expected (National Agency for Education, 2103). Thus, proposals to strengthen digitalization in schools were further articulated in the Swedish National IT-strategy (The Committee for Digitalization, 2014) and National digitalization strategy for schools (Swedish Government, 2017) in the terms of *adequate digital competence*. While the role of the school leader has been seen to be important for the digitalization of schools, the focus and efforts in supporting this work have fallen behind in relation to digitalization. Therefore, in line with the new policy documents, a national effort in professional development in leading for digitalization has been implemented by the National Agency of Education.

Leading Digitalization (*Leda Digitalisering*) (National Agency for Education, 2018a) is one of several national school development programs in Sweden. The program is directed to school leaders and school organizers who are interested in gaining more knowledge in what digitalization can lead to for the organization, the school and teaching. The program aims to increase skills in

leading for digitalization in the organization and for those who recognize digitalization as an area of development for the organization, using collegial professional development as a process to support this work. The aim of the module is to map one's own organization's strengths and when complete to have an elaborated and established development plan on the school or school organization level. The module provides increased knowledge and competence about the possibilities of digitalization to support school development and more efficient administration, and to develop and strengthen the learning environment for students.

Leadership in the Midst of Digitalization

In international research, strategic digital leadership has been in focus related to the school leader's responsibility of leading for digitalization and the importance of the role of the school leader. According to Sheppard and Brown (2013), this role can either facilitate or impede complex change. McLeod, Bathon and Richardson (2011) describe the intersection of school leadership and digital technology as using technology to teach and involving the traditional content of educational leadership. Williams (2008) emphasizes the role of school leaders at a time of rapid growth of digital technologies. Dexter (2008) describes the role of the school leader as vital for students' digital competence. Overall, the most important issue in the digitalization in schools is said to be the presence of informed and effective school leaders (Dexter, 2008).

In their study, Leithwood and Riehl (2003, 2005; see also Leithwood & Jantzi, 2006) argue that a successful school leadership includes four functions and processes. These functions are related to (a) *setting the direction* including goals, norms and vision, (b) *developing people* including educational support, supportive learning environments and development of learning cultures, (c) *developing the organization* including organizational infrastructures that support learning and development, and (d) *developing teaching and learning* including structures for pedagogical development. Part of these four functions and processes is the formulation of goals and how goals are being put into actions and activities that can drive organizational and educational change and development (Leithwood & Jantzi, 2006; Petersen, 2014).

Over the years, there have been attempts to re-conceptualize Leithwood and Riehl's framework (2003, 2005) to be used in a digitalized context, for example, as for understanding aspects of ICT leadership (Dexter 2008; Petersen, 2014) and the development ICT policies in school and education (Vanderlinde, Dexter, & van Braak, 2012). Re-conceptualization of the four categories has also enabled the analysis of strategic digital school leadership as a means for taking advantage of digitalization and educational change in schools (Dexter 2008; Petersen, 2014).

In this study, these four categories will be used to analyze aspects related to leading for digitalization. Specifically, they will be used to understand not only what is meant by digitalization to school leaders, but also what professional development seems to be needed to support the work in leading for digitalization.

Method

The data used in this pilot study were gathered through a survey answered by 31 school leaders at the end of their studies in the Swedish national professional development program for school leaders. The National School Leaders' Training Programme (Rektorsprogrammet) is a national program on an advanced academic level, which provides new knowledge and networking opportunities and initiates school development processes. The studies comprise 30 ECTS over a period of three years and are mandatory for all newly employed school leaders as of March 15, 2010 (National Agency for Education, 2018b).

The survey, mainly based on open-ended questions, considered if the school leaders were participating in a program for leadership for digitalization, what digitalization meant for them in their profession as school leaders as well as what professional development they felt would support the work in leading for digitalization. The school leaders were also asked if they were familiar with or were participating in the National Agency for Education's module *Leading Digitalization*. In the analysis, data in the form of free text comments were coded and categorized according to the method of Hjerm and Lindgren (2010). In the first step text and sentences were coded by giving them names and notes describing the content. Thereafter, codes were analysed and placed into categories of meaning according to Dexter's (2008) four categories: *setting the direction, developing people*, *developing the organization,* and *developing teaching and learning*. The school leaders' comments are reported as School Leader and number, (*SL1-SL32*).

Results

In this section, the school leaders' understanding of digitalization and digital competences needed for leading digitalization will be presented according to Dexter's (2008) four categories: *setting the direction, developing people*, *developing the organization,* and *developing teaching and learning*.

Setting the Direction

The school leaders' comments in this category create a picture of digitalization as a complex area, which in turn makes leading for digitalization complex. For the school leaders, digitalization covers a broad number of different themes in which they are responsible for initiating, implementing, maintaining, documenting and leading for digitalization. In this category, three subthemes are found: *teaching for the future, more efficient school organization and leading for digitalization.*

The school leaders see the importance of digitalization for preparing students for the future: "That we prepare the students for technology in the information society and how they can use it in the best way" (SL6). This involves using digital tools for developing teaching for students and "supporting all students despite their difficulties" (SL7). One school leader expressed this responsibility: "That I am responsible for developing and leading the work with digitalization for both students and teachers" (SL5). More efficient

school administration is expressed as "finding efficiency/critical review of what we do on the intranet for achieving sustainable management of documentation" (SL9) and "less paper, maybe faster work" (SL10). This also involves implementing digital tools for "pedagogical documentation, pedagogical planning, etc." (SL28).

For the school leaders, leading for digitalization involve school development "to drive school development… to work for the school of the future" (SL25). Here, the school leaders also see that the work with digitalization is closely intertwined with digitalization as expressed in steering documents and course plans. One school leader expressed this as: "Seeing that the school works with the digitalization [aspects] which are necessary. Programming is only one small part of digitalization; there are many other aspects as well. The students must learn to use digital tools in all their subjects" (SL32). School leaders also express the need for "more knowledge about the steering documents" (SL21). One school leader, for example, sees the need for this knowledge for the continued work in the school: "I need to gain knowledge about what this means and how we can plan the implementation at the school" (SL24).

Developing People

In this category, developing people, the school leaders' survey comments are related to the need for professional development that is needed for both the school leaders themselves as well as for the teachers in the schools. The subthemes in this category are: *professional development for leading for digitalization* and *professional development for teachers*.

In regard to their own professional development 20 (64 %) of the school leaders, involved in this study knew of the National Agency for Education's module *Leading Digitalization*. The remaining 12 (27 %) were not familiar with the module. For those participating, the working with the module is seen as a form of professional development in leading for digitalization. This module was seen to be supportive: "[I] am studying with the National Agency for Education, their module, which I think is a good base for me to implement this [digitalization] in my schools" (SL7), and " I think that the National Agency for Education's material on digitalization is going to help me" (SL24).

Many of the school leaders also noted the importance of deep knowledge in the steering documents and course plans as a necessary form of professional development. This was often related to their own needs for professional development: "professional development in the new knowledge requirements" (SL14), as well as the need to "update myself in the new knowledge requirements in the courses that have been changed" (SL18). Another school leader expressed the need for more personal knowledge from an educational perspective as well as from the student perspective: "more digital competence about education as well as the student's view of digitalization" (SL6). Another school leader expressed the need for professional development in digitalization itself: "in order to lead digitalization, I must have knowledge about the concept" (SL2) as well as what digitalization would mean for "teachers' work, technology, functions, etc., at the school" (SL23). Although most school leaders see a need for professional development, a few of them

are not clear about what professional development is needed, e.g., "don't know" (SL3). One school leader expressed not seeing "any need at this point in time" (SL11).

For the school leaders, another important aspect of professional development is the need to provide good conditions in digitalization for teachers. Teachers need to deepen their competence in order to develop new forms of teaching and learning which comprise digitalization. One school leader commented upon digital competence and the "courage" (SL19) to use digital tools for his/her own use and in turn for teacher' use. This school leader also found that, while there is strong technical development, "method and pedagogy were behind" (SL1) and therefore the need for professional development for teachers. The school leaders also see "basic digital skills" (SL27) as important. It is important that the teachers receive "the right professional development based on their level of knowledge" (SL30). According to the school leaders, teachers need support to "see the advantages and adapt their work methods" (SL26). This involves seeing the possibilities of digitalization. One school leader explains digitalization as a resource: "Digitalization is a hidden resource in school and must begin to be used to its full potential" (SL25).

Developing the Organization

In this category, developing the organization, several subthemes were seen: *accessibility, new technology, administration* and *forms for sharing*. One central aspect, which is evident in this as seen in the school leaders' comments, is access to technology as a resource.

Accessibility to technology is seen as important for developing the organization: "That computers and other ICT-tools are necessary tool for teachers and students" (SL3). Here, the school leaders mean that accessibility is important for compensation: "Compensating children and families who do not have technology at home" (SL31). Accessibility to technology is also found to be important from the perspective of equity. According to one school leader this is construed as: "All teachers and students have the same basic foundation. Those who want to get a bit further must have the possibility to do so" (SL12).

Beyond accessibility, new technology is also seen as an important condition for developing the organization. New tools are necessary: "Tools to facilitate meetings, not necessarily physical meetings. Platforms for information and dialogue, joint Office 365 groups, and changes in textbooks" (SL2). Another school leader expressed this as the need for "infrastructure, e-mail, learning management systems" (SL13). The new technology also involves managing inventory "checking the accessibility to computers/tablets" (SL14) as well as issues of "digital work environmental issues" (SL13).

Developing Teaching and Learning

In this category, developing teaching and learning, a central aspect is the support of new forms of teaching. Three subthemes are seen: *creating*

conditions for new forms of teaching and learning, sharing information and *collegial learning*.

According to the school leaders, important aspects in developing teaching and learning through digitalization involve supporting teachers' work, "giving teachers' the conditions to [develop teaching] through equipment and knowledge, professional development, for example online courses" (SL8). The school leaders also see digital tools as a form of "extending/strengthening pedagogy" (SL21). Developing teaching and learning also involves supporting development of teaching with higher level of digitalization: "for example, (distance, flex-distance, remote) in order to be able to simplify work (communication, assignment and study materials) as well as taking advantage of more possibilities (multimedia, images, film)" (SL19).

The work with developing teaching and learning comprises making internal work for teachers more efficient and flexible as well supporting support teachers' collaborative work. This involves supporting collaboration and spaces to share materials: "that the teacher can share information and materials with each other" (SL19).

In supporting the development of teaching and learning, the school leaders provide examples of different methods for teacher teaching teachers. A central aspect here is "collegial learning" (SL2) as well as "leading teachers' learning processes" (SL4). Methods for supporting collegial learning are "web tools, best practice, and pedagogical cafés" (SL13), giving teachers the possibility to share teaching methods and experiences with digitalization. Collaboration is also suggested within the school, for example, with the school's IT-group. This could involve the opportunity to "test programming" (SL22) as well as "basic and deeper skills in critical review" (SL9).

Discussion and Conclusion

As school leaders set the direction for digitalization, it appears that the role of the school leader as a leader appears to become a more complex task in a complex area. As noted by the school leaders, there are many areas and levels at which the school leader has the responsibility for driving development and for leading for digitalization. School leaders' work in this area involves initiating, implementing, maintaining, documenting and leading for digitalization for themselves, teachers, and students as well as for the schools as organizations. This is done while supporting teachers and students with the accessibility to technology, supporting new teaching methods, more efficient administration as well as driving school development, i .e., a large number of complex tasks on several levels. For these school leaders, digitalization, as a complex concept in itself, appears to increase the complexity of the role of the school leader in leading for digitalization (Dexter, 2008; Petersen, 2014). Setting the direction appears to involve a complex role and the need to prioritize in leading for digitalization.

Another central aspect seen in the survey involves accessibility to technology. Accessibility to technology, according to these school leaders, appears to be a strong condition for supporting the organization in its developmental work.

Technology appears to be a vital aspect for digitalization as the responsibility of the school leader (Dexter, 2008). This is an interesting finding, when considering otherwise reported good accessibility to technology (National Agency for Education, 2013). Despite good accessibility to technology, there seems to continue to be challenges related to technology. This challenge would appear to be of even more importance in schools and municipalities in which students do not have access to computers at home.

The need to develop teachers' and students' digital competence as well as professional development for teachers is reported by the school leaders in this study. Creating supportive conditions for all students to be able to meet the challenges of today's information society is noted as well as the ability to take on a critical stance. Creating supportive conditions for teaching and seeing the advantages of digitalization in the classroom is also put forward for teachers as well as achieving the knowledge requirements in the steering documents. For themselves, several of the schools leaders point out the need for deeper knowledge of the steering documents, as well as knowledge of digitalization. Both of these aspects appear to be an important part of leading for digitalization. The same can be said for creating good conditions for teachers for access to technology, as well as supporting and managing teachers' professional development, including knowledge, and methods for teaching with technology as well as developing teachers' professional stance towards digitalization. For a school leader, supporting teachers' work with digitalization appears to be a strong base for supporting student outcomes (Dexter, 2008). Therefore, there is the need for professional development for school leaders (Grönlund et al., 2014; Håkansson Lindqvist, 2015; Hylén, 2011; Pettersson, 2017).

In developing teaching and learning, the school leaders' work with learning for digitalization can be seen as supporting the work in developing new knowledge and work methods for themselves and for their organizations, which takes time (Grönlund, 2014; Grönlund et al., 2014; Håkansson Lindqvist, 2015; Tallvid, 2015). Further, the work with digitalization is expected to contribute to a larger picture, i.e., school development. Thus, professional development in new areas, such as leading for digitalization, will most likely be necessary. In this study, while a few school leaders are unsure or do not need professional development at this time, very few school leaders note the need for skills for leading for digitalization. Many of the school leaders note the importance of professional development, which entails an increased understanding of the steering documents. A serious concern for school leaders is to deal with aspects of their own professional development as well as teacher professional development in the task of combining their own competences and leading others in the digitalization process (Leithwood & Riehl, 2003, 2005; Leithwood & Jantzi, 2006). Worth noting is that the professional development module in leading for digitalization is voluntary, i.e., based on interest, time and opportunity to complete this programme. This leads to questions regarding which school leaders choose to participate, which in turn restricts these new competences to certain schools leaders in certain school and certain municipalities. This issue then becomes an issue of digital equity as well as gaining adequate digital competence in line with the Swedish

National IT-strategy (The Committee for Digitalization, 2014) and National digitalization strategy for schools (Swedish Government, 2017).

The results of this small study show that school leaders see digitalization as a wide and complex concept that can be related to student outcomes, digitalization in curriculum and course plans, and responsibility for the digitalization of teachers' and students' work in the classroom. The need for professional development comprises their own professional development, teachers' professional development, students' digital competence and digitalization of schools as organizations. Conclusions can be drawn that the role of the school leader is strong in setting the direction, supporting students' and teachers' work with digitalization for teaching and learning. How school leaders prioritize and lead for digitalization and support their organizations in this work, i.e., leading for digitalization, will be of importance for schools' development.

Implications for Practice and Future Research

Regarding implications for practice, how time, resources and professional development are made available to support school leaders in their work with leadership for digitalization will be important. This also concerns the prioritization of digitalization as one of many important areas in schools as organizations. Considering the complexity of school leaders' leadership, future research could involve a deeper study of what professional development could be of interest for school leaders in their leadership for digitalization. Moreover, a critical viewpoint on how school leadership is affected by, and can be employed in, the ongoing digitalization is important to study.

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Author Details

Marcia Håkansson Lindqvist
marcia.hakanssonlindqvist@miun.se

Fanny Pettersson
fanny.pettersson@umu.se