

Description of collaborative strategies to meet the challenges of Finnish education

Descripción de las estrategias colaborativas frente a los retos de la educación finlandesa

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Recibido: 28 de junio de 2017

Aceptado: 17 de octubre de 2017

Abstract

This paper examines the challenges and renewal of Finnish education in the context of competence learning in the 21st century. Challenges of Finnish education in the classroom, school, municipality and national level are discussed, as well as challenges in teacher training. The new Finnish national curriculum and how it guides students in learning the skills of the 21st century is presented as a solution to meet the challenges presented. In addition, it presents the recommendations of the Finnish Teacher Training Forum, which it also supports to meet the challenges. For example, the creation of teacher collaboration networks is suggested as a way to support the continuing professional development of teachers, particularly with regard to their teaching of 21st century competencies and the use of digital tools as part of these competencies. These networks could facilitate the creation and exchange of educational innovations related to teaching and learning through teacher collaboration, research and problem-solving activities, as well as close links with classroom practice.

Keywords. Collaborative educational networks, 21st century competencies.

Resumen:

Este trabajo analiza los retos y la renovación de la educación finlandesa en el contexto del aprendizaje de las competencias del siglo XXI. Se discuten los desafíos de la educación finlandesa en el aula, la escuela, el municipio y el

nivel nacional, así como los retos en la formación del profesorado. El nuevo currículo nacional finlandés y cómo guía a los estudiantes para aprender las competencias del siglo XXI se presenta como una solución para superar los desafíos presentados. Además, se presentan las recomendaciones del foro finlandés de formación de profesores, que también apoya para superar los desafíos. Por ejemplo, se sugiere la creación de redes de colaboración docente como una forma de apoyar el desarrollo profesional continuo de los profesores, particularmente en lo que respecta a su enseñanza de las competencias del siglo XXI y el uso de herramientas digitales como parte de estas competencias. Estas redes podrían facilitar la creación y el intercambio de innovaciones educativas relacionadas con la enseñanza y el aprendizaje mediante la colaboración, la investigación y las actividades de resolución de problemas de los profesores, así como mediante una estrecha relación con la práctica en el aula.

Palabras clave: redes educativas de colaboración, competencias del siglo XXI

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Introduction

There is a mission in societies to educate students in a way they acquire broad set of knowledge, skills, and attitude that could be applied in everyday and working life situations in 21st century – 21st century competences. However, there is not an agreement about the skills or competences that are most important and how such skills or competences could be taught and learned. As a part of this discussion the role of digital tools and environments in learning and as a part of 21st century competences have been discussed. The use of digital tools (educational technology/ information and communication technology/ICT) and environments in learning include large variation of the different tool use, like a use of a software enabling students and teachers to accomplish their tasks (text processing, spreadsheets, graphics, etc.); computer-assisted learning (CAL); computer-assisted inquiry; use of open and distance learning (ODL) tools, like Virtual Learning Environments (VLEs); and the use of social media.

Many policymakers and educators think that use of digital tools and environments is a simple solution for supporting students to learn 21st century competences. However, the use of digital tools and environments do not change bad teaching to good teaching neither necessarily improve the education system. For example, PISA-researchers argue that students who used computers most widely tended to perform slightly worse on average than those with moderate usage. Their analysis suggest that the linkage may not be a simple causal one, nor necessarily a simple linear [1]. Therefore, in an optimal situation digital tools could help education where it's already doing well, but it does little for mediocre educational systems and even could cause harm. Simple, reform in education is not a technological problem.

The aim of this paper is to analyse challenges in education and how these challenges are planned to overcome in Finnish education context through educating professional teachers in pre-service and in-service programs, renewal of national framework curriculum and through making the school site supportive for teachers' professionalism. However, we focus here mainly to the Teacher Education Development Program. The use of digital tools and environments are essential in the overcoming of the challenges. However, as already mentioned digital tools and environments do not change bad or routine teaching and learning to good or meaningful learning. Neither digital tools nor environment as such do not change teachers and school site supportive for learning and interaction. Therefore, the challenges and overcoming the challenges are analysed in general level.

There are different definitions and interpretations to the professional teacher and how this professionalism could be supported. In addition to professional teacher several other terms, like quality, effective, competent, expert, ideal or respective

teacher, are used in a similar way [2]. A professional teacher, internationally, is supposed to have a profound and versatile knowledge base [3]. This professionalism is based especially on the level and depth of the teacher's subject matter knowledge, as well as on his or her knowledge of pedagogy [4]. Professional teachers collaborate with other teachers in planning, implementing, and assessing their own teaching and their students' learning and, moreover, constantly work to improve their teaching based on these assessments. They formatively monitor the progress of their students, particularly those with special needs, and try to support all students' learning.

Considering teachers as professionals is different compared to considering them as effective. An effective teacher is considered to be able to support students' learning and achieving knowledge and skills which could be demonstrated in a national or district level test, measuring the outcomes of the learning. This type of teacher is often associated with the educational accountability; where testing is organized in order to recognize effective and non-effective schools and teachers [5]. In Finnish education context we do not have neither testing nor inspection which are typically used for quality control and as a part of heavy accountability policy.

Finnish education context

A central aspect of the Finnish vision has been broad literacy and educational equality. As a part of this, the Finnish school curriculum have emphasized the learning of competencies need in knowledge society or 21st century society, such as critical and creative thinking and learning to learn (ways of thinking); the competence for inquiry, problem solving, communication, and collaboration (ways of working); the competence for using tools, including broad literacy and the use of digital tools; and the competence for acting in the world in different contexts (global and local) [6].

An important general characteristic of Finnish education policy is the culture of trust: education policymakers and education authorities trust teachers, together with principals and parents, to decide on how to provide the best possible education for children and students and, moreover, how to develop education and school context at any given level. There has never been district or national level testing in the Finnish comprehensive school, nor have there been national or local school inspectors since the late 1980s. The teaching profession has always enjoyed great public respect and appreciation in Finland. Parents also trust the school, its teachers, and the quality of the work it undertakes [7].

Altogether, 60% of Finnish teachers and principals feel that they are professional, they like their job and feel that their work in education is valued highly in Finnish society [8]. Finnish teachers professionalism is build through providing five-year

master's-level programs at universities. However, teachers' professionalism is not only a characteristic of the teacher but also of the whole Finnish education context [9].

Finnish curriculum thinking

The curriculum cycle in Finland is approximately 10 years. The latest revision of the National Core Curriculum for Basic Education (NCCBE), replacing the previous one from 2004, was published in 2014. According to Vitikka, Krokfors, and Hurmerinta [10], the current national curriculum system in Finland has three key driving factors: 1) a description of broad goals, like learning of 21st century competencies, following national core values, such as human rights, equality, democracy, and natural diversity; 2) the autonomy of municipal authorities in providing and organizing education, so that the local curriculum is the guiding document at the local level; and 3) different approaches to schoolwork. Consequently, the Finnish approach to curriculum differs from the outcome-based approach that encompasses a detailed description of intended learning outcomes.

The local-level curriculum is a dynamic and flexible document, designed at the grassroots level as a joint effort between principals, teachers, and parents, as well as local community organizations, such as athletic and cultural groups. The local curriculum is seen more as a process than as a product, and it has a central role in school improvement [11]. As a part of this process local physical and digital environments are designed.

Materials and methods

Although, Finnish students have performed well in the international comparative studies several challenges have been recognised in Finnish education. When the PISA 2012 [12] and 2015 reported declines in the proficiency of Finnish youth, Finnish policymakers argued that the educational system is failing to promote the 21st century skills that will adequately prepare students for the future. Another discussion concerns the challenges linked to the impact and use of new technologies in and out of school situations [9].

In order to recognise challenges, a Finnish Teacher Education Forum was established by the Ministry of Education in February 2016 to foster the development of teacher education. The minister nominated almost 100 experts from universities, ministry, the teachers' union, student unions and municipal union to the forum and asked them to analyse research outcomes related to teacher education, to identify best practices based on teacher education strategies and policy documents in other countries, organise a national brainstorming process related to the renewal of teacher education and, finally, to prepare a Development Programme for Teachers Pre- and In-service Education

(on life-long professional development). The forum was asked to describe the kinds of teacher education and continuous professional development that are necessary to ensure that teachers support students in the classroom to learn the competences (knowledge, skills, and attitude) needed today, tomorrow and in future. The first author of this paper was nominated to chair this forum.

The literature review [13] undertaken by the forum identified several important perspectives, which were discussed in the forum meetings and taken into account in the planning of the development programme. One important topic discussed in the meetings based on the literature review, was the link between teachers pre- and in-service training. According to the literature review, during pre-service training student teachers should be willing and able to learn new competences continuously in their work as teachers, including competences needed to organise inclusive classrooms, entrepreneurship education, networking and co-teaching. One outcome of the literature review emerging from the perspective of classroom interaction and learning, identified best practices for professional teachers. In addition to literature review, the challenges facing education in Finland, identified in the PISA and TALIS survey results were discussed and summarised in the forum meetings [12, 14].

As one of its activities, the Finnish Teacher Education Forum organised a national web-based brainstorming process related to the renewal of teacher education following the concept of the 'wisdom of crowds' [15]. According to this principle, a large group of people is collectively smarter than a few experts and is more likely to come to wise decisions. In practice, a call to participate was sent to teacher educators in all Finnish universities, as well as to all teachers and administrative employees working in the field of education at both national and local levels. The goal of this invitation was to solicit diverse opinions related to the development of teacher education, encouraging decentralisation of idea generation and independent thinking. The participants were first guided to generate ideas about what will be important in the future of teacher education, and to evaluate or rank about 10 ideas contributed by others. In the ranking, participants assigned a number (from 0 to 100) evaluating the importance of these ideas. The web-based brainstorming tool combined similar ideas and reduced the number of ideas offered for ranking.

Altogether, the forum organised eight full-day meetings of the entire forum, along with several meetings of smaller thematic groups, during 2016 and 2017. The steering committee of eight people met every month, discussing outcomes of the literature review, best practices based on teacher education strategies and policy documents in other countries and the brainstorming process.

Results: Challenges in Finnish education in the era of 21st century

As described in previous chapter the Finnish Teacher Education Forum recognised several challenges in Finnish education through making a literature review, analysing the challenges indicated in PISA and TALIS surveys and

through national brainstorming. The challenges are analysed in next chapter on the classroom, school, municipality, and national levels. Based on the analysis of challenges the Development Programme for Teachers Pre- and In-service Education was prepared. This development programme [16] set out holistic competence goals for teachers' pre- and in-service education and continuous life-long professional development.

Challenges in the classroom

The key challenge on the classroom level is to find ways to guide students to learn 21st century competencies. Teachers and school leadership must consider the impact of teaching 21st century competencies to the practical operational arrangements in the classroom and in the school. This may prove challenging because current teacher-led learning methods do not support the learning of 21st century competences. In addition, the school may need to invest in the redesign of its physical learning spaces and digital environments.

On the classroom level, the successful implementation of the teaching of 21st century competencies calls for 1) the recognition of students' individual backgrounds and ways of learning, 2) the introduction of new versatile and engaging teaching and learning methods, 3) the versatile utilization of different digital tools and different physical and digital learning environments, and 4) the empowerment of students to influence their learning, the ways of teaching and learning.

Challenges in the schools

In schools operational practices and leadership structures need to be re-engineered to support students to learn 21st century competencies. Teachers may feel that their individual competency is insufficient to address the new teaching challenges in their classroom. They would need additional competency to support students to engage in learning in digital environments and learn critical and creative thinking skills as well as to guide students' collaborative inquiry and problem-solving activities.

To enable the versatile ways of learning, the school needs to take steps to establish the school as a safe, supportive environment within both its physical and digital environments extents. Especially, the learning of 21st century competencies calls for versatile physical and digital learning environments that extend beyond the school's perimeter. Students learn everywhere and should be supported wherever they learn.

Challenges at the municipality or school districts level

At the Finnish municipality level, a key challenge is helping schools develop the four key characteristics that support the teaching and learning of 21st century competencies. Local education policymakers face the challenge of establishing a strategy-based school network that supports schools in collaboratively

developing the four areas. As Finnish municipalities face severe challenges in their long-term financing, calling for increased productivity in public services, the community needs to simultaneously find efficiencies in the design of the school network.

Although the Finnish tradition discourages emphasis on school assessment and rankings, an approach being considered is to collect and use school-level assessment data to feed into decision-making on the allocation of resources. Accurate assessment data would allow decision-makers to balance different equity areas and to determine the optimal learning conditions, notably class sizes, for each area.

National-level challenges

At the national level, the learning and teaching of 21st century competencies challenges education policymakers to develop appropriate nationwide guidance for the challenges mentioned above. In addition, national-level policymakers need to review the current teacher education curriculum and professional development programs offered to in-service teachers and school management to align them with the teaching and school management challenges introduced by the teaching of 21st century skills. In addition, current national policies related to QA and assessment, the long-term funding and productivity of education as a public service, and its equal availability to all inhabitants need to be reviewed in the light of the new challenges.

Challenges in teacher education

The international teaching and learning study, TALIS 2013 (Teaching and Learning International Survey) [14], demonstrated several weaknesses in teachers operations [8]. According to the TALIS study, most Finnish teachers find that they are able to influence factors that promote learning, but they are not skilled enough to integrate digital tools and environments on learning activities. Moreover, according to TALIS, teachers' participation in continuous professional development and learning of pedagogy needed in digital learning environments seems to be fading. In particular, the demand for continuing education that meets long-term challenges and develops professional competence is decreasing. Moreover, TALIS emphasizes that induction and orientation for new teachers has a low take-up in Finland. Teachers feel that initial teacher education does not prepare them sufficiently for 21st century challenges, such as operating in digital and physical environments, collaboration between home and school, multi-professional co-operation, controlling disruptive behavior in the classroom, or catering to the needs of challenging students.

To develop the additional knowledge and skills teachers need for teaching 21st century competencies, teachers should be encouraged to organize and participate in professional development programs and other in-service training as a natural part of their career development. Faced with new challenges in their

classroom, teachers can no longer expect to be able to run their classroom in a “lone wolf” fashion with no significant retraining over the course of their entire professional career. As this is a significant change to the self-image of a professional teacher, national policy and local providers of education (municipalities) should consider measures that support teachers, especially those who have advanced far into their career, in adopting the new image as a coach or facilitator to other teachers. Moreover, university teachers delivering teacher education and professional development programs for in-service teachers confront similar challenges as classroom teachers: the university teacher does not have personal experience in teaching 21st century competencies, yet is expected to guide student teachers and in-service teachers in doing the same.

Discussion of results: How challenges related to 21 century learning will be overcome in Finnish context?

The renewal of national level curriculum

To address the challenges analysed above and to help students learn 21st century competencies, a new national-level curriculum was prepared in close collaboration with teachers, teacher educators and providers of education (municipalities). During the five-year design process the need for 21st century competencies or skills influenced the design of the curriculum [6]. The new curriculum, NCCBE (Finnish National Board of Education [17]), was accepted in December 2014 and guided all providers of education and schools prepare a local curriculum that was implemented in the beginning of 2016.

The new NCCBE outlines the need for broadly scoped competency that aligns with 21st century competences, including the competencies, such as critical and creative thinking, and an ability to use a wide range of tools, such as socio-cultural (language) and digital (technological) tools. The new curriculum emphasises that students’ well-being, defined as the balanced development of personality and the ability to manage daily life, is also an important goal of learning. According to the curriculum, students’ physical and emotional well-being should be supported through school and classroom operations. At the school site, there should be different actions and support available, such as an anti-bullying program, a school nursery, a social worker, and psychology services. The use of digital tools and environment may provide many possibilities for active and meaningful learning.

Success in implementing the 21st century competency movement through the new NCCBE, as manifested in the local curriculum, depends on teachers’ competencies and on the support available for them. Teachers may not yet possess the knowledge and skills that would enable them to successfully teach 21st century competences. In addition, teachers may feel insecure with or even fear the teaching of 21st century competences, as it involves project-based and

inquiry-oriented learning methods and, moreover, integration of digital tools, which are not part of their existing competences, to these activities. This gap between the needed and current teaching practices have been reported in national PISA reports [18] and in national monitoring reports [19]. Therefore, the core challenge is to support teachers and principals to start teaching according to 21st competencies and simultaneously learn the 21st century competencies that enable them to do so.

The renewal of Finnish teachers' pre- and in-service education

Based on the recognised challenges in education, the Development Programme for Teachers Pre- and In-service Education was developed in the Teacher Education Forum. This development programme [16] set out holistic competence goals for teachers' pre- and in-service education and continuous life-long professional development. A key aim in the development projects, started after the publishing of the development program, is the use of digital tools and environments in education in order to support students to learn 21st century competences. The program will describe what kind of teacher education and continuous professional development of teachers are necessary to ensure that teachers are able to support students in the classroom to learn the competencies (knowledge, skill and attitude) needed today, tomorrow and in future. The key aims in the program are:

A broad and solid knowledge base

- Subject matter knowledge, pedagogical and pedagogical content knowledge, contextual knowledge;
- Interaction skills and skills for collaboration in different networks and partnerships (experts at school, family and society collaboration);
- Knowledge about learning and diversity among learners (including special needs and multicultural backgrounds);
- Competence to act as an autonomous professional who can plan, implement and assess his or her own practices and students' learning;
- Competence to act in various digital and physical learning environments, including digital skills and learning in settings outside the classroom;
- Professional ideology, including a shared understanding of professional values and ethics codes (e.g., expectations for ethical conduct towards (i) students, (ii) practices and performance, (iii) professional colleagues, and (iv) parents and community);
- Research skills (skills required to consume research-based knowledge);
- Awareness of the different dimensions of the teaching profession: the social, philosophical, psychological, sociological and historical bases of education as well as schools' societal connections;

Expertise in generating novel ideas and educational innovations

- A positive attitude towards continuous change, which requires tolerance of uncertainty and new and innovative ways of thinking;

- Willingness to create a positive atmosphere supportive of creative processes and curiosity, risk-taking related to classroom teaching and learning, creation of educational innovations and, moreover, awareness of the importance of this attitude for creative outcomes;
- Competences necessary for the implementation of creative processes, the generation and evaluation of ideas related to classroom teaching and learning and the creation and adoption of educational innovations;
- Competences required to design a school-level curriculum, to implement it and continuously to evaluate and improve it;

Competences required for the development of their own and their schools' expertise

- Self-regulation skills and skills for control over their work (skills for self-assessment);
- Competences involved in working in networks and teams, such as networking with health care experts at the school site;
- Competence in curriculum design and as an innovator for pedagogical approaches and learning environments;
- Competence to reflect on their own personal pedagogical views (reflection for, in, and on action);

One solution to support Finnish teachers support students at school to learn 21st century competences and use of digital tools is a national Innokas Network [20], which has been established in Finland for the nationwide sharing of best practices related to the learning of 21st century competences. Continuous design and adoption of educational innovations in collaborative teacher teams inside a school and in teams of teachers coming from different schools is suggested as an alternative form for teachers' professional development. The key guiding idea is that teachers and students themselves are innovators. In general, such networks support teachers' professional development because they encourage the generation, sharing, and adoption of novel educational ideas among network participants. Further, such networks create environments or cultures for learning, in which participants learn and use new knowledge and skills in different contexts .

Conclusions

The aim of this paper has been to analyse challenges in Finnish education and how these challenges are planned to overcome through the national curriculum renewal and teachers pre-service and in-service programs.

The challenges in Finnish education were recognised in classroom, school, municipality and district level. In a classroom level better it is needed better support to students' engagement in learning, better guiding to active and collaborative learning and better recognition of individual needs of learners. Moreover, teachers should better facilitate the learning of 21st century competencies like learning of critical and creative thinking and problem-solving and, moreover, better integrate the use of digital tools and environments to teaching and learning. At the municipality or district level level, the teachers should more frequently engage in working and planning in teacher teams and with other partners and stakeholders in order to design and implement education innovations and reforms, like the innovative way of use digital tools and environments. In teacher education there are challenges in pre- and in-service education: teachers should have competence and willingness for life-long professional development and networking.

Key measure for supporting students in Finnish classrooms to learn 21st century competences through employing digital tools and environments have been the new national framework curricula for basic education (primary and lower secondary schools) and upper secondary education. Both curricula emphasise the 21st century competencies and support teachers to analyse key education questions, such as what will education mean in the future and how can education prepare young people to the future and what types of competences will be needed in everyday and working-life situations and what kind of learning environments and practices or teaching methods would best produce the desired education and learning.

Professional teachers are at the center of addressing the challenges arising from new national curricula, including those associated with the aims related to the learning of 21st century competencies. This raises the question of what changes should accordingly be made to both in-service and in initial teacher education. Teacher education should consider the current baseline knowledge on 21st century skills, the currently available best practices of teaching them, and proficiency in continuous improvement methods that allow teachers to both contribute to the national pool of knowledge and implement national education policy initiatives in their school. Preservice teacher education should especially develop readiness for collaboration and networking and for continuous lifelong learning as outlined above. Although, Finnish preservice teacher education does emphasize teacher leadership, teachers should receive in-service support or training on leadership so that they can act individually and as part of a team in the continuous design and implementation of educational innovations, like the use of versatile digital tools and environments. These measures may provide a

partial solution to the challenges identified at the school, municipality, and national level.

The nationwide sharing of best practices requires the establishment and maintenance of teacher and school collaboration networks, such as the Innokas Network [20]. Such networks could work by facilitating face-to-face meetings and the use of new social networking tools. Teachers' collaboration in the networks starts from the needs of the teachers and includes both the creation of educational innovations and their application in the classroom. Therefore, the networks serve the learning and development needs of the students in the classrooms. Further, such networking supports integrating inquiries, problem solving, and reflective practice as a part of professional development. There is a close connection to classroom practice, which is regarded as central for teachers' professional and ongoing development. As far as possible, such collaboration networks should be aligned with existing structures at the school, municipality, and national levels, without sacrificing the peer-to-peer nature of the teachers' interaction model.

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