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Meaningful Learning Experiences in the Finnish Teacher Education

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ABSTRACT--- During the last few years the change of the school and how the school should change in the first place to meet the challenges of the future have been discussed a great deal. The talk has begun of the cross-disciplinary competences, referred to also as transversal (generic) competences in the curriculum, and of developing teaching towards the integrated modules called multidisciplinary learning modules in the reformed curriculum of the basic education. The multidisciplinary learning modules promote the reaching of the objectives set for the basic education and in particular, the development of the cross-disciplinary competences.

This research was carried out in a Finnish class teachers' adult education programme during a study unit in January 2016. This study unit was a multidisciplinary learning experience, which was planned together and in which the contents of the seven different subjects taught in the comprehensive school were combined. The aim was to gain experiences of integrating the subjects, of planning and implementing learning modules, of meaningfully adapting information and communication technology as well as of collaborative learning. The research also surveys the knowledge of the concepts, which are related to the study unit. The results showed that the multidisciplinary learning module had offered meaningful experiences. The students had mastered well the study unit concepts. Their experiences in relation to the aims were mainly good, versatile and sufficient. Nearly every student intended to implement similar modules in their future work. The main objective of this study unit was to increase the students' understanding and knowledge about the multidisciplinary learning module through experiential learning and to provide them with a surface to reflect on the matters in their future studies.

Keywords--- multidisciplinary learning experience, experiential learning

1. INTRODUCTION

In Finland, there has been a lively debate about reforming and developing the basic education to respond better to the needs of the future and to the changes in society. Reforming education is timely and an attempt is made to respond to it, among others, with the reformed core curriculum for the basic education which has been implemented in the autumn of 2016 in all the Finnish schools. In the work of developing the curriculum, there have been manifold discussions about the changing society and about its effects on the contents of teaching. In the future, a broad view on the intercultural issues is needed. The matters to be studied during the education and their connections to the surrounding society are getting even more complex and because of this there has also been a will to take teaching in the direction of more integrated modules which are called multidisciplinary learning modules in the curriculum. (Cantell, 2015, p.11-13.)

The teacher education is one of the most significant influences in regards to developing the Finnish school. In Finland, teacher education has been organized in the universities since 1971. The teachers' level of education is high and the desire to get to the teacher's profession is great (see Sahlberg, 2015, p.136-147). The teacher education has to move in the front of the development, showing the direction (Husu & Toom 2016). Studying, understanding and command of the curriculum are the center of the teacher education and in the class teachers' adult education programme of the Kokkola University Consortium Chydenius the curriculum studies commence immediately at the beginning of the studies. This year they began with the practical implementation of a multidisciplinary learning module. Reinforcement of the cooperation between the different disciplines in the higher education is a matter worth developing and with the help of this study unit an attempt was also made to develop the multidisciplinary approach with the integration of subjects. In this article this integrated study unit and the multidisciplinary learning module, which was implemented during it are examined as experienced by the teacher students.

Multidisciplinary learning and multidisciplinary approach are comparable concepts with the aim to form a shared un-

derstanding and integrated entity of the knowledge of different disciplines. This requires the integration where the disciplines together create a shared understanding from the themes to be examined. (Cantell, 2015, p.14-15.) In the reformed curriculum (POPS 2014) the multidisciplinary nature and integration of the content to be studied are presented with the help of multidisciplinary learning modules. The multidisciplinary learning modules integrate the matters to be dealt with in different subjects in the same theme and they together form the module of contents. (Cantell, 2015, p.11-12.) The aim of studying through the learning modules is to promote the so-called transversal (generic) competences (also referred to as cross-disciplinary competences), which in the new curriculum consist of seven areas (1. Thinking and learning to learn, 2. Cultural competence, interaction and expression, 3. Taking care of oneself and managing daily activities, 4. Multiliteracy, 5. ICT competence, 6. Competence for the world of work and entrepreneurship and 7. Participation and influence, building the sustainable future.) These sectors have several connections between them and their aim is to support the pupils' growth as human beings. One noteworthy sector is ICT competence, which has been raised as an important skill which is developed throughout all learning. Reinforcing the use of ICT and its pedagogical teaching use have been the central aims of Finland's education policy for several years and the role of ICT as a tool for thinking, expanding the learning environments as well as in diversifying the approaches is important (see Vahtivuori-Hänninen, Halinen, Niemi, Lavonen & Lipponen, 2014).

The approaches and learning environments that are used also affect the development of cross-disciplinary competencies. The functional learning environments of the basic education that have been stated in the curriculum engage the learners and make possible the communal and creative construction of knowledge and also the active cooperation with experts and communities working outside the school. In that case it is no longer a question of only formal teaching tied to the school environment but attention is paid to the opportunity for informal learning in planning the teaching. As the learning environments broaden, learning will also be possible in the experientially rich and authentic environments. However, this requires pedagogy, which exceeds the limits and has versatile approaches and environments, building of learning modules and multi-professional pedagogical cooperation in its core. (Kangas, Kopisto & Krokfors, 2015.) The teacher students' own experiences of learning environment have, according to many researchers (Biggs, 2003; Ramsen, 1997; Väisänen, 1993), an effect in the study methods and further still in the quality of learning. So the students' experiences have indisputable significance in the quality of learning. The learning environment can be built to support a certain conception of a situation in question but every student perceives the situation from his or her own starting points. The learning environment, which clearly indicates the objectives, gives the freedom of choice as well as independence, it emphasizes the student's responsibility and activity, and it is connected with good learning. The students' observations and interpretations regarding the learning environments and the examination of these is necessary for the creation of meaningful learning experiences.

The changes related to working life and works are reflected in the competences that are required of the children now and in the future. Lifelong learning rises to an important role and requires the so-called skills of the future which are, among others, critical thinking, problem-solving skills, information literacy, cooperation, life skills, learning to learn (see, for example, Rotherham & Willingham, 2009; Silva, 2009). In addition to these, lifelong learning requires the skills of acquiring and managing information, sharing knowledge and skills and ability to learn from one another, creativity and generic skills (see, for example, Field, 2012). The research results show that the teaching in Finnish school does not promote the skills of the future well (Shear, Gallagher & Patel, 2011; Norrena & Kankaanranta, 2012.) Also the teaching of thematic entities (cross-disciplinary competences in the new curriculum) is very weak in the Finnish school (Niemi, 2012). On the whole, many points of view to be observed are connected to the reform of the basic education and the teacher education as the educator of the teachers who are equipped with the skills and knowledge of the future rises to a significant role. The competencies provided by the studies and an understanding combined with a personal learning experience are a precondition for carrying out teaching which is in accordance with the curriculum. At school the teacher is a pedagogical expert who, in cooperation with others, plans, organizes and directs learning processes according to the curriculum and according to pedagogical objectives. The teacher's responsibility is, through their operation, to create integrated educational modules where the multidisciplinary approach, the emphasis on the future skills, the use of ICT and the expanding learning environments are seen. The reformed curriculum emphasizes all of these. This article describes the possibilities of the teaching experiment in teacher education in offering the students the knowledge and skills through experiential learning for implementing a multidisciplinary learning experience. The purpose of this is to provide the students with the knowledge about the methods of integration in the new curriculum and the understanding of concepts and also the skills to pay attention to the points of view which are related to implementing multidisciplinary learning modules through an own experience and which will also be deepened later in the studies.

2. TEACHER EDUCATION IN FINLAND

In Finland the teacher education is organized in two different ways, through class teacher education and subject teacher education. The class teacher work from the start of the school, for the first six years with 6–13-year-old pupils. The subject teachers are responsible for the pupils' studies during a three-year period of upper school and possibly during the

voluntary upper secondary school education. The class teacher's education in Finland is popular; the applicant numbers in the common entrance examination of the teacher training of Finland's universities have been approximately 5000–6500 applicants every year. In 2015 the number of applicants was over 6000, which meant that there were multiple applicants for each study place. The teaching profession is sought after for several reasons and the interest in the profession can be sparked at whatever stage of life. The teachers' motivation for the field of teaching is created mainly from the interest in a certain subject, from the positive model they have received and also from the fact that the profession is experienced as meaningful and challenging. The majority of the teachers feel happy in their work and the teacher's work is regarded as attractive and interesting. (Jokinen, Taajamo, Miettinen, Weissmann, Honkimäki, Valkonen & Välijärvi, 2013.) The Finnish teacher education model has been recognized in many connections as an objective in which direction other countries will also proceed. There is a huge interest towards it all around the world, both in educationally far advanced countries and also in developing countries. The significant problem in many countries is the fact that the teacher's profession persuades neither young people nor particularly gifted students, unlike in Finland (Teacher training 2020, 2007, p.11).

Kokkola University Consortium Chydenius is an independent university-level teaching and research unit, which is the only permanent department in Finland offering adult education for primary school class teachers. Kokkola University Consortium in co-operation with the Faculty of Education at the University of Jyväskylä, organizes continuation courses leading to the degree of Master of Education and a qualification as a primary school class teacher. The annual intake of adult pre-service teachers for training as primary school teachers is 40 people. Also in Kokkola there are many applicants. For example, in 2016 there were 219 applicants per 40 study places. The average age of the pre-service teachers is about 33–39 years. The studies last for 2 to 2.5 years, depending on the agreed individual study plan. All the pre-service teachers in our education program have completed some studies of pedagogy (among others, educational studies) the minimum of 80 study credits and have work experience from the teacher's profession with the minimum of 4 months. The pre-service teacher adult education in Kokkola University Consortium Chydenius places emphasis on a sense of community, where the expertise of adult pre-service teachers is developed through interaction and sharing one's views. Each pre-service teacher is a member of a team of 3 to 4 pre-service teachers during the course of the education program.

The class teacher adult education curriculum in Kokkola University Consortium Chydenius is built to support pre-service teacher's growth towards a meaningful teacher profession in a modern world. In the Kokkola Adult Teacher education program the teacher profession is built on conception of learning, which is based on socio-constructivism. Student centeredness, openness of the learning environments, connection between a theory and practice as well as communal nature of learning is stressed as pedagogical and didactic emphases of the education. The collaborative approach is realized through, among others, the learning tasks that are cooperative and through adapting them to practice. ICT is used as a tool for the learning tasks and for all teaching, and the students are guided to plan and to implement innovative learning modules and – environments. In the education, attention has been paid to the changes in the society and to their effect on the teacher's work. The education emphasizes networking of the school and cooperation with the different agents of the society. (Class teacher adult education curriculum 2014–2017, p.2-6, p.8.)

3. EXPERIENTIAL LEARNING IN THE ADULT EDUCATION

The adult student's experience in life and the professional experience are significant starting points in planning the university studies. The adults' experience of how their earlier experiences are appreciated is an essential starting point in the education (Malinen, 2000). The objective of experiential learning is to realize through operation and the experience the tacit knowledge, bodily knowledge and experience knowledge (Malinen, 2000). The experiences are based on the earlier experiences and significances as is also emphasized in the constructivist conception of learning (Pagan, 2006; Rausten von Wright & Wright, 1998) but an adult student's experiences may also be an obstacle to new learning. The central objective of the multidisciplinary learning module is to make possible the learning experience which is authentic, personal and appreciates an adult student's experience in life and which could operate as a fresh surface of learning experiences to reflect on for the commencing teacher studies. Lindeman (1926, p.7) realized a central principle already almost a century ago: experience is the adult student's living textbook. Gruntdvik's view on the significance of living in the moment and of living interaction can be considered as an equally important andragogical principle (see Siljander, 1982). The significance of the multidisciplinary learning module is based on a comprehensive theory about adults' learning and development (experiential learning theory ETL) (Kolb & Kolb, 2012; 2005.) Knowles (1990) has defined the andragogical assumptions of the adult learners. They have a need to know and the capability for self-direction, they have formed the idea of themselves as learners, they are equipped to learn in real-life situations and their orientation for learning from them is a problem- and life centered. Furthermore, they are led by the internal motivation for learning. The learning experiences, which are offered to the adult learners, must be offered with respect to these assumptions and by respecting the learners themselves and their unique experiences. Niemelä (2011) has stated in his doctoral thesis that an adult student expects and indeed requires self-functionality and sees this, in particular, as the core feature of the pedagog-

ical operation, impulses, impetus and expectations which lead to the self-functionality.

Malinen and Piirainen (2016) have crystallized that the foundation of the adult education is formed by three important objectives: 1) transfer of power from teacher to the adult learner 2) the teacher's confidence in the adult learner and in a group as well as 3) guiding towards self-evaluation. The foundation of the multidisciplinary learning module was based on these exact principles. Malinen (2000; 2013) and Malinen and Piirainen (2016) have indeed defined the experiential approach so that, subjectivity, investigation and dialogical cooperation belong together and none of these on their own is enough. The adult student has to gain the experiences of the learning within the sphere of all these dimensions and making this possible was a goal in planning and implementation of the multidisciplinary learning module.

4. DESCRIPTION OF THE MULTIDISCIPLINARY LEARNING MODULE

In the class teachers' adult education the Multidisciplinary learning module -study unit is connected to the multidisciplinary studies of subjects and themes, which are taught in the comprehensive school. So it is a part of a study unit, which is formed by the studies of different subjects. In addition to mastering the subjects, the general objective of the study unit is the understanding of the contents of different disciplines and their integration in teaching. The objective is also to promote the students' skills to develop the pupil's cross-disciplinary competencies in the different learning environments by utilizing ICT in a pedagogically meaningful way. (Class teacher adult education curriculum 2014-2017, 8.) In this implemented teaching module the following studies were included: Basic studies in education, the teacher's information and communication technology, mathematics, Finnish language and literature, history, music and science to form an integrated module, in which the contents and objectives were based on the curriculum. Of the university teaching staff there were the seven lecturers of didactics who were involved in this module. The objective of the study module was to gain experiences of integration of subjects, experiences of planning learning modules, experiences of implementing learning modules, experiences of meaningful adaption of information and communication technology and experiences of working collaboratively. The study module contained 40 contact teaching lessons, it was divided into two calendar weeks and its scope was 3 study credits.

The multidisciplinary learning module was based on the multi-professional cooperation. Planning was carried out as cooperation between the experts of the different disciplines. As a result of the cooperation, the integrated learning module "Looking for the signs of life" was carried out immediately at the beginning of studies through activating and collaborative learning tasks that were placed in different parts of the town. This was possible because earlier studies of pedagogics and work experience in teaching are required of the students before the beginning of the teacher education. The study module was also placed in the beginning on purpose because then the students get a practical, personal experience of the multidisciplinary learning module onto which they can reflect later studies and towards which the reformed curriculum of the basic education directs them. "Looking for the signs of life" -study unit formed a module of contents, which consisted of matters related to the students' new hometown of Kokkola. The practical implementation was in two parts and took two weeks. The objective of the first week was to get experiences of integration and adapting the use of ICT in a pedagogically meaningful way as well as to broaden the view on the learning environments. In addition to these, the objective of the second week was the planning and implementation of learning modules. The objective of the study unit was also to practice collaborative working skills and to offer experiences of the joy of learning. The above-mentioned objectives were based on the andragogical principles where an adult student is respected as a responsible and self-directing learner. They were nudged towards self-functionality (cf. Niemelä, 2011).

The learning tasks for the first week had been planned to support the versatile approaches and collaboration and they had been placed, for example, in a café, library, the premises of the museum and the railway station. The learning tasks required the competences for the construction of knowledge, creativity, problem-solving skills, sharing the knowledge and skills and the ability to learn from one another (see, for example, Field, 2012). The versatile approaches were manifested, for example, in the recordings of voice landscapes, in the making of the living statues, in bringing into life the historical characters, and as geometric poems and haiku videos. The opening of concepts took place by reading the scientific texts and in the collaborative construction of knowledge that had been gained through it. The learning task for the second week helped to practice skills in planning and implementing. The students had to plan an integrated learning task that was based in the multidisciplinary learning module modelled during the first week. The learning tasks were planned for the student friends and together they formed a multidisciplinary learning module.

The broadening learning environments and the cooperation partners outside the school were a part of the module. Learning experiences and different end products were shared in a closed Facebook group. The multidisciplinary learning module was based on the experiences, which the students gained by creating and experiencing their own learning process in interaction, collaboration and self-direction. This multidisciplinary learning module was indeed quite a new experience to many of the students and 79% of them experienced that the teaching period had given life to many new ideas and the remaining 21% felt that the experience had brought some new ideas. These new ideas were positive as the following quotations show:

"We got a lot of experiences and we shared them with one another through Facebook ... we have been able to try different applications with the help of iPads, which has been a great experience"

"The different learning environments have become familiar and only the imagination is a limit. In principle, learning can take place anywhere." "We got new learning experiences and joy of learning"

The outdated structures of subject and course based university curriculum need to be deconstructed. The curriculum of the university studies should be based on open multidisciplinary learning modules and learning tasks that combine multiple sciences and allow versatile student centered methods in executing them. The challenge is how to shake the deep structures of the universities' teaching and learning strategies and hierarchy between professors, university teachers and students. The vision of the development of the university studies (see Husu & Toom, 2016) marks out the importance of the student-centered pedagogy. An open and integrated study module will offer the students deeper learning experiences and the cooperation among university teachers will lead to transformational learning arrangements.

5. RESEARCH TASK

The research study task was to describe the students' experiences during the study unit regarding the integration of the subjects, planning and implementing the learning modules, meaningfully adapting ICT and of collaborative working. These experiences were studied in terms of adequacy, quality, depth and versatility. In addition to this, the research clarifies the understanding of the concepts connected to the learning unit.

The research questions:

1. What kind of experiences students gained during multidisciplinary learning module?
2. How did their understanding of the concepts developed?

The research questions were outlined to include the students' early experiences and concepts, as the research study took place at the initial stages of the studies. The experiences in relation to the aims of the study unit were chosen as the focus of the research.

6. METHODOLOGY OF RESEARCH

Methods and Procedures

The first research material was collected with a two-sided questionnaire. The form contained altogether 31 questions, and 20 of those questions sought out a response for how the objectives of the study unit had been reached (they have been listed earlier), other questions were either background variables or explanatory variables. The reaching of each one of the objectives was asked about with the help of the indicator that has been based on the semantic differential, and it contained four sectors. The functionality of the questions of the questionnaire to the supposed theory was tested with a factor analysis. The semantic differential is a method developed by Charles Osgood in 1957 and in it the measuring is done with a scale where the opposite ends of the scale are described with a pair of adjectives (see table 1). The adjective pairs are opposite properties to one another. (Valli, 2015, p.100; Snider & Osgood, 1969, p.6-8.) Here the questions of different sectors were as follows:

Table 1. Scale example.

I gained experiences of integration of the subjects					
Good					Poor
In a variety of ways					Restrictively
Superficially					Profoundly
Inadequately					Sufficiently

Sample Selection

The data were collected immediately after the study unit, at the end of the last contact teaching session, when all the students (n=48) gave their responses simultaneously. The questionnaires were collected away at the same time in this teaching situation.

The second set of data was collected as a group discussion in which they themselves answered four questions. Three university teachers moderated the discussion. The interviewees were divided into six groups in which case there were 7 people in each group. All of the students who had participated in the implementation of the learning module (n=48) participated in this discussion. The time used for the discussion and answering was 30 minutes. The qualitative data was handled by coding it based on the concepts rising from the theory, and the results of these were described by categorizing them according to theme.

Data Analysis

The questions built on the basis of semantic differential have been inputted in the Spss-statistics programme on the scale of 1-5. They are examined under each curriculum aim with the help of the respondents' averages. values 1-2 represent strong positive attitude, values 2.01-2.99 positive or a mainly positive and the values over 3 negative one. The scale is 1-5, in which case the averages over four are already very negative views. In the results the placing of the respondents within these categories is examined with the help of the percentages. The understanding of concepts was, in turn, evaluated with the assessment scale of 4-10, which is familiar from the school assessments. The authentic quotes from the students' group interviews have been incorporated in the quantitative results.

7. RESULTS OF THE STUDENTS' EXPERIENCES

The respondents of questionnaire were asked how well they knew the different concepts in scale 4-10. They understand the concept of collaborative teaching best. They experience that they manage it extremely well. More than 80% of the respondents answered to the questions in questionnaire that they commanded the concepts at least well. The students managed best the most interesting concepts from the point of view of this research study, for the multidisciplinary module (53%) and collaboration (60%), over half of the students stated that their competence was at an excellent level. The lowest grade in the collaborative learning is eight and the average rises near nine (8.83). They give an excellent grade in the understanding of concepts as follows: for discipline based learning 42%, phenomenon based learning 38%, multidisciplinary module 53% and for integration 26%. The averages indicate that the concepts have been understood quite clearly. One explanation for these high positive percentages is probably on the scientific texts in which the concepts were opened and from which a shared understanding was created together in the group. The averages are the following: subject based learning 8.2, phenomenon based learning 8.4, multidisciplinary module 8.45 and integration 8.1.

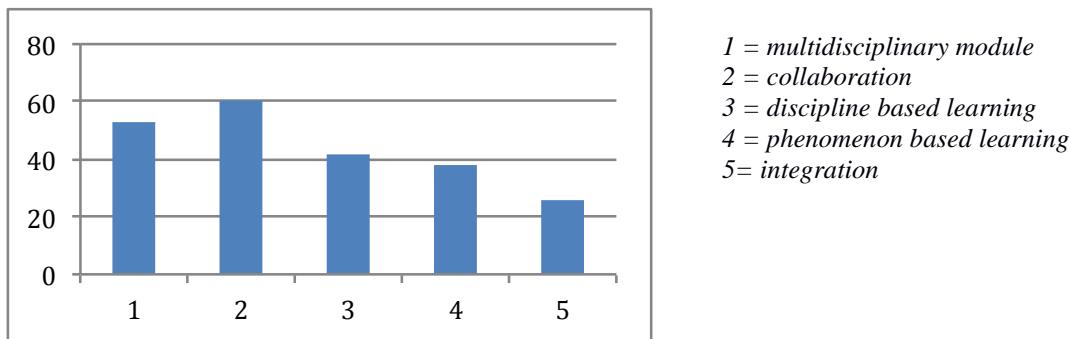


Figure 1. Students, that mastered study unit concepts excellently, in percentage.

Students got the best experiences from collaborative working out of the areas of the multidisciplinary learning module. They have gained experiences extremely well, extremely diversely, profoundly and sufficiently. For example, regarding the experiences of collaborative learning on the scale of good – poor, 96% answered that the experiences have been good and the rest, 4% gave their answers in the middle of the scale. The experiences are seen as versatile by 85%, profound by 68% and sufficient by 72%. The range of averages in these four sectors reflects quite a strong positive view. The averages vary in the range of 1.45-2.34. Values 1-2 represent strong positive attitude, values 2.01-2.99 positive or a mainly positive and the values over 3 negative one. The scale is 1-5, in which case the averages over four are already very negative views. Many different positive points of view are connected to collaboration as the following quotation shows:

"Collaboration was practiced a lot and the significance of the group was emphasized. A feeling that we were trusted as students came through collaborative work and at the same time confidence towards the teaching staff was born" (group 2)

Of the sectors which are in accordance with the objectives of the multidisciplinary learning module, the second best results were reached in the experiences of adapting information and communication technology, which is one of the central objectives of the Finnish education policy (see Vahtivuori-Hänninen etc., 2014). The students experienced that they had gained experiences in a fairly similar way as they had from collaboration. The experiences were extremely good and extremely versatile as well as sufficient but they still missed more profundity. For example, 92% of the interviewees answered that the experiences of collaborative learning had been good on the scale of good poor. The matter is seen as versatile by 92%, good by 90%. The averages of sectors vary in the range of 1.70-3.06. In Information and communication technology the students began from rather heterogeneous initial skill levels, however, they reached successes quickly:

"We have been able to try different applications with the help of iPads, which has been a great experience" (group 3)
"Sharing work in Facebook was a nice way to be able to see the work of the others on my own schedule" (group 3) "We have been quite different in the ICT skills and we have learned new skills from one another" (group 2)

The experiences that have been gained from integrating the subjects also show that the learning objectives have been achieved at a good level. Their gained experiences have been good, versatile and sufficient. Some of the interviewees (28%) thought that the experiences have, however, remained a little superficial. In spite of this, 81% of the interviewees thought that on the scale of good poor the experiences have been good. 77% see the experiences as versatile and 49% as sufficient. In the latter sufficient-inadequate comparison there is, furthermore, a large group (45%) who give their responses in the middle of the scale without giving an opinion towards the direction of either of the adjectives. The averages of sectors vary in the range of 2.00-3.02. Also in the group discussions the positive attitude rises forth, for example, in the following:

"Integration and phenomenon based approach became familiar" (group 3)

There was the least dispersion in the averages of the experiences, which are related to the implementation of learning module when the range was 2.15-2.79. However, the dispersion between different interviewees was great, the scale had been quite widely used. The negative answers were 6-32%, the largest number of these in the superficiality. If the average of the sum variable of these four part questions is examined, one can state that 79% is satisfied with the experiences and only 4% are dissatisfied so examining from also this point of view one can be satisfied with reaching the objectives.

The least experiences were gained in the planning of modules. On the other hand, the natural explanation to this is that one cannot necessarily get a comprehensive picture of every sector when operating in such a short project and working in a group. This is an area, which is still returned to several times during the education. The averages vary between 2.38-3.11 and there were dissatisfied answers (in other words, averages of more than 3.00) only 2-15% in the part questions, so also in this objective the start has been reasonably good in the students' opinion. Of the positive responses, one that can be raised is, for example, the fact that 70 considered the experiences that were gained from planning as versatile.

The positive experiences of the study unit rise higher when the learning modules are examined. The responses that have the average below 3, in other words on the positive side of the scale in the answers, are considered as positive in here. The average of each sector has been composed of four different questions.

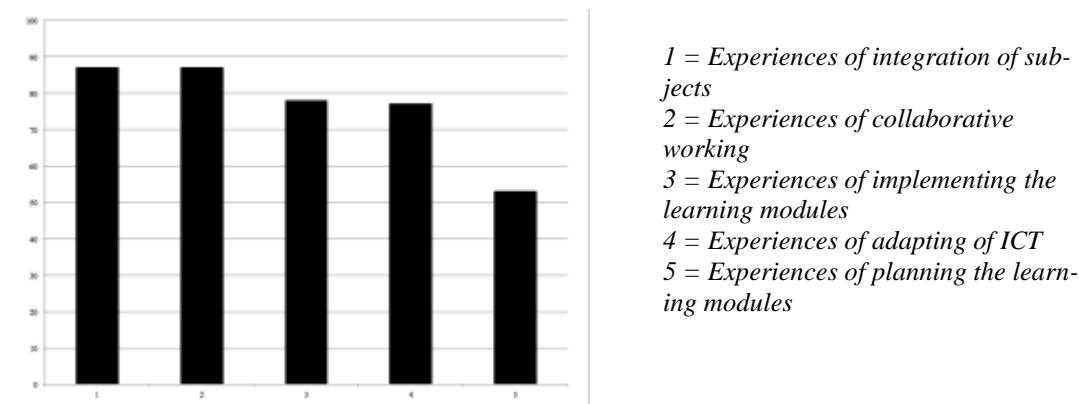


Figure 2: The proportion of the students (%) with positive experiences in all the sectors in procents.

These views are supported by the fact that 98% intend to carry out the corresponding learning modules at least once in the future in their own teaching, 55% even often. Only one student does not believe in personally building similar learning modules in the future in teaching.

8. DISCUSSION

This research shows the study unit, which is in accordance with the reformed curriculum carried out by the Finnish teacher education. Multidisciplinary learning module, integration, cross-disciplinary competences, collaboration, information and communication technology as well as the broadening learning environments are at the center of this learning module. The implementing of thematic entities (nowadays the cross-disciplinary competences) has been weak in Finnish schools. In the reformed curriculum of basic education (POPS, 2014) an attempt is made to raise the cross-disciplinary competences by studying the contents of different subjects through multidisciplinary learning modules. The objective in this study unit has been the experiencing and understanding of this kind of multidisciplinary learning module. The research has gone some way towards enhancing our understanding of the experiences that students' can gain through mul-

tidisciplinary learning module.

This learning module had its starting points in the objectives of the new Finnish core curriculum, which was implemented in the autumn of 2016. In this curriculum the matters to be studied are approached through the multidisciplinary nature and integrated learning modules. In a multidisciplinary learning module the contents of seven different subjects were joined into one module of contents. Which subjects and how much is worthwhile to integrate at any given time is always dependent on the theme of the module and in the subjects' own objectives of the curricula. This cooperation was fruitful for the teachers and, among others, it helped to see the work of others better. Fruitful cooperation increases cooperation in the future in research projects and development assignments, among others.

The experiential learning is a proven, good method in the adult education. The students' own experiences make the studying possible from the starting points in which the ability to learn in a self-directing way and in the real life situations are emphasized and where the internal motivation to learn is connected to them. (Malinen & Piirainen 2016; Niemelä 2011.) According to the results, the form of the tasks, which are given to the students and the possibilities offered by the learning environments can be assumed to have had an influence. The learning tasks were built so that they made a freedom of choice and independence possible, they emphasized the student's responsibility and activity and supported the collaborative learning. The learning environments were authentic and experientially rich and the students had personal interest in researching the new environment (see Knowles 1990). The unit of studies also required the use of the so-called future skills. The students got plenty of practice, among others, in their skills of acquiring information, in creativity, problem solving and in the skills of learning from one another and sharing the knowledge (see Pagan 2006).

On the whole this project was, on one hand, a large module from the student's point of view as it was built to form a two-week project, but only a small part of the teacher students' degree from the perspective of the whole studies. However, it opened the participants' eyes to one of the biggest matters in the curriculum reform, to the multidisciplinary learning modules. The participants were quite positive as a rule after the education about the experiences they had gained and they believed the transfer effect on their own teacher professionalism to be good or fairly good (cf. Biggs 2003; Ramsen 1997). In the class teacher education similar modules need still to be included, among others, in the teaching practices, but also otherwise. It is important that the studies cover widely the different points of view of the same matter and that the positive experience serves as the basis for building of the theoretical knowledge (Kolb & Kolb 2012). For some, it opened their eyes and others started already having ideas for utilizing it. The university studies and the degree are the foundation for the class teacher student when they move on to working life, therefore the universities have to be at the forefront of development and to anticipate the future situations in their own teaching, as has been done in the Kokkola University Consortium (see Rotherham & Willingham 2009; Silva 2009). In there, the studying of the new curriculum was begun for over two years before it is implemented. The students often want very practical, concrete studies alongside their theoretical studies. When implemented in this way, it brings in the required concrete element which is easily transferred into practice. The first references from it will be obtained in the future teaching practices where this research study is intended to continue. The current research was limited by the fact that participants were adult teacher students with a lot of experience of teaching and learning. The research was not specifically designed to evaluate factors related to implementing the curriculum to practice but it serves as a base for future discussions of integrated study models in university.

9. CONCLUSIONS

In this research, the views and experiences of class teacher students have been examined but it is equally important to remember the further training of the graduated teachers who are already working in the field. One must invest in it with the help of the further education. The class teacher education faculties of the universities are the best engines also in this work, when they together with the municipalities and the schools tailor the education modules case by case to the everyday life of the teachers and their pupils. The strengthening of the cooperation and shared planning should indeed be stronger than before in the future. Learning that has been built on the basis of multidisciplinary modules, forms stronger motivation and more permanent learning for the students. It is learning, which does not consist of learning by heart but it is based on more profound understanding and perceiving larger entities.

This project opened the participants' eyes to one of the biggest matters in the curriculum reform, to the multidisciplinary learning modules. Personal experimentation into building a multidisciplinary module together with the student colleagues and the university lecturers provides a good basis for the future. For some, it opened their eyes and others started already having ideas for utilizing it. Hopefully it has a transfer effect on the future work, in which case the pupils at school will get to study in this way that leaves deeper imprints in the memory.

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