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Social and Health Care Teachers' Experiences of Implementing Multidisciplinary Specialisation Studies in a Digital Learning Environment

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Abstract. The aim of the study was to find out how teachers and project actors experienced the implementation of the specialisation education in a digital learning environment. The methods were triangulation with paired t-test, ANOVA and content analysis of qualitative data. The results showed a statistical difference between the responses after the first and second implementation of specialisation education. The overall results show that teachers and project actors demonstrate a strong commitment to producing and developing student-centred and work-life-centred online specialisation education.

Keywords: specialisation education · multiprofessional cooperation · digitalisation

1 Background

The constant changes of the social and health sector require teachers to update and specialise their competences. The rise of digital learning environments offers a unique opportunity to expand teaching methods and support teachers' multidisciplinary specialisation [1].

Social and health care is a field where rapid technological developments and changing practices pose constant challenges for teachers. Providing multidisciplinary specialisation education is one way of meeting this challenge, and digital learning environments offer an effective means of supporting such training [2] Digitalisation enables diversification of teaching, increased flexibility, and different ways of engaging students. The digital learning environment opens new opportunities for multidisciplinary specialisation studies. It allows students to participate at any time and from any place, making it easier to combine work and study [3].

Digital learning environments allow teachers to create a variety of learning tasks and e-learning environments, which promote multi-faceted learning [4] Teachers are critical of the successful use of digital learning environments in the delivery of multidisciplinary specialisation studies. Their experiences range from enthusiasm and success to challenges and uncertainty [5].

Student learning in Europe is defined based on European Credit Transfer and accumulation systems (ECTS). One ECTS credit equals 27 h of student work. This system is important because it provides a framework for studying in different countries and in different higher education institutions across Europe [6] In Finland, specialisation education is defined at levels 6–7 of the European Qualification Framework (EQF) in the social and health care sector, specialisation education is defined at level 6, which is equivalent to bachelor level education. Specialisation education is strongly connected to working life [7, 8] and is one form of lifelong learning. It complements and updates the competencies needed in an evolving working life. Lifelong learning relevant to the work life is now often offered online in the form of short courses. The advantage of online studies is in their affordability, flexibility of learning independent of time and location, and accessibility [9, 10].

A national UUDO project, implemented by 14 different universities of applied sciences (UAS), designed, and implemented a fully web-based specialisation education on digital health and social care service. Both students and teachers in the education came from all over Finland. Students of the specialisation education mostly had more than ten years of work experience and they evaluated the content of the studies important [11, 12] The teachers may have had different roles during the project: some as course teachers, others as tutors, but some also as project managers or in other project management roles. In Finland, UAS are independent institutions. They can cooperate with other UAS, and they support regional cooperation [13]. The multidisciplinary digitalised specialisation education is driven by the objectives of the national Digivision project, which aims to increase common digital studies and the possibility for students to study seamlessly across different UAS [14].

This article explores teachers' and project actors' perceptions of teaching and learning and how to further improve the multidisciplinary specialisation education. The aim of the study was to find out how teachers and project actors experienced the implementation of the specialisation education. **The research question** is how teachers and project actors describe the implementation of the specialisation education and multiprofessional cooperation.

2 Materials and Methods

The respondents in the study were all the experts in social and health care and other professional fields who either taught in the first, second or both implementations of the specialisation education or acted as project actors without teaching responsibilities.

Quantitative and qualitative research methods and data triangulation were used. Samples were collected from teachers after both specialisation educations (5/2022 and 8–10/2023) using an electronic form. The instrument for data collection was a structured survey. The themes of the survey were: 1. Content and requirements (3 questions), 2. Implementation of the education (10), 3. Resourcing of work (5), 4. Cooperation with students (8), 5. Learning outcomes (5) and 6. The development of professional competence (6). Each thematic category included the above number of Likert-scale questions (1–4) and open-ended questions that allowed the respondents to share their reflections on each theme.

The research data consisted of teachers´ and project actors´ answers and statements related to the research question in the two consecutive specialisation educations. The anonymized qualitative data consisted 52 answers to 6 open ended questions. In the first education (2021–2022) the total number of responses was 22. In the second education (2022–2023), the total number of responses was 11. Thus, a total of 33 participants responded to the survey, some of whom taught in both specialisation educations.

SPSS 28.0 with t-test was used for statistical analysis to find the relationship between the first implementation answers and the second implementation answers. Paired t-test is an arithmetic mean test between two variables means, to check any differences [15, 16]. The significance level was 5%. Significant test ($p < 0,05$) shows that only one question (242) shows differences between the first implementation answers and the second implementation answers.

Answers to open-ended questions were analysed by using qualitative content analysis [17]. This data was compiled, tabulated, and analysed by using inductive content analysis [18]. At the end of the analysis, triangulation of the results was used. Triangulation is a research method in which different methods are used to collect data on the same phenomenon [18]. In this study, triangulation was used to view qualitative results with quantitative results and the aim was to understand them by reviewing the different results. The qualitative research data was copied from the tables separately and transferred to separate files. The research data was analysed by two researchers who reviewed the result categories and results obtained. Meaningful expressions were separated into their own groups and result categories were created. The categories were compared and refined. Finally, the results were viewed with quantitative and qualitative results and conclusions and findings were drawn.

3   Results

The statistical results are only indicative, because the sample is small. Out of these 37 questions only one shows statistical significancy ($p < 0,05$). Question "Student cooperation: 24.2 The common instructions given to the tutors have been clear" (p 0,02) showed a statistical difference between the first and the second responses. The questions "Student collaboration: 24.4 student collaboration between higher education institutions (0.08) and "Development of professional's own skills: 26.1 Collaboration between higher education institutions has increased knowledge of different learning environments" (0,06) showed slight significance, indicating only uncertain results. There were no statistical differences between the years 2021–2023 answers except the answers mentioned above.

The qualitative results have been divided into two main categories based on the analysis. The categories are: 1) Teachers' experiences of the implementation and 2) Teachers' experiences of learning in educational development. The main categories were further divided into subcategories, which are described in Table 1. Teachers´ experiences of implementation and development of specialisation education.

3.1   Teachers' Experiences of the Implementation of Education

The teachers´ experiences of implementation of education were divided into four subcategories: 1) The variation in the demands of the study courses, 2) The work-life relevance of the studies, 3) Student-centred studies, 4) Commitment to joint development.

The variation in the demands of the study courses related to the misalignment between learning objectives and course content, as well as variation in the workload of students during the courses. Moreover, the respondents sought to ensure that the courses meet the learning requirements of EQF Level 6. Respondents described the relevance of the courses to the world of work as students were able to use the methods they had learned and apply the knowledge in their work with colleagues. The subcategory 'student-centred studies' included expressions describing the possibility for students to choose courses relevant to their learning needs, student-oriented guidance and proactive and clear information about their studies. In the subcategory 'commitment to joint development', the respondents described the differences between teachers in participating in their involvement in the development of the specialisation education and the need to update the course contents to meet the demands of constantly evolving digital developments.

3.2   Teachers' Experiences of Learning in Educational Development

The teachers' experiences of learning in educational development were divided into four sub-categories: 1) Learning together, 2) Enabling self-regulated and systematic learning, 3) Applying effective pedagogical solutions, 4) Development of the studies and course offerings.

The respondents contemplated learning from their own and students point of views. The applicable skills for working life consist of respondents' statements describing how students apply the content and methods of the courses in their own work during their studies. These descriptions were particularly related to the implementation of service design and development tasks. Respondents described collaborative learning as a dialogue involving students in specialisation education and professionals in working life. Teachers´ own learning occurred in collaborative teamwork and in examining the learning tasks and used pedagogy. The category "Development of the studies and course offering" describes the evaluation of the curriculum and the development of structures in specialisation education to make the education more student-centred.

Table 1. Teachers´ experiences of implementation and development of specialisation education

Main category	Subcategory	Statement examples
Teachers' experiences of the implementation of the specialisation education	The variation in the demands of the study courses	"The high learning objectives of the studies, which the contents of the study courses do not reach. Variability between study courses; the level of requirements and the workload for students vary significantly from one to another. The EQF6 level needs to be re-evaluated in all study modules."
	The work-life relevance of the study courses	"The development task has proven to be a good method for applying and strengthening the accumulated skills. Particularly pleasing has been the observation of enthusiasm and commitment to development and collaboration with the client of the development task. Development tasks carried out for one's own employer have been motivating. Through the development work, some students have been attached to new job tasks."
	Student-centred studies	"In my opinion, the selection of elective studies should be guided more effectively for students, for example, advising them on what they should choose based on their interests. There should be a greater emphasis on the role of the tutor in this regard." "There is a lot of room for improvement in student/user-centeredness when examining the student administration in higher education institutions. "
	Commitment to joint development	"Some teachers were more committed to the development of study modules than others. In the field of social and health care digitalisation, things are changing rapidly, so study modules should be constantly developed and updated." "Within the universities, the allocation of resources was very different. In some schools, there is a lot of staff, and for some, there may be only limited hours available for the actual implementation. Universities of applied sciences have different practices in general operating procedures."

Table 1. (*continued*)

Main category	Subcategory	Statement examples
Teachers' experiences of learning in educational development	Learning together	"The dialogue brought about by the development task with various parties clearly strengthens competence. Additionally, the work done in small groups has proven to be fruitful even in various challenging situations." "Partner universities of applied sciences have learned a tremendous amount along the way. In hindsight, the division of labor could have been further clarified from the beginning."
	Enabling self-regulated and systematic learning	"It's great that a student can choose courses they feel they need for developing their skills and assemble their expertise like a puzzle." "In my opinion, guidance for the selection of elective courses should be even more detailed for students, advising them on what they should choose based on their interests. Emphasis should be placed more on the role of the tutor in this process."
	Applying effective pedagogical solutions	"The large number of students affected the types of learning and assessment methods that could be used in the courses. "
	Development of the studies and course offerings	"Clear structures and operating methods are important, as well as reaching agreements together. It's also crucial to consider whether specialisation courses could be divided into components, from which those specializing can accumulate credits within a specific timeframe." "Clarity and simplicity, especially from the customer's perspective, regarding what the entity consists of what to choose, how to enroll, etc."

4   Discussion

The purpose of this study was to find out, through responses of teachers and project actors, how the respondents have experienced the implementation of the specialisation education and how they describe the implementation and multiprofessional cooperation of the specialisation education. The overall results show that teachers and project actors demonstrate a strong commitment to producing and developing student-centred and work-life-centred online specialisation education [1]. Many students in the specialisation education had long working experience [11]. Teachers were willing to develop curricula from a student perspective. The curricula of the Multidisciplinary digital health and social

care service specialisation education is based on nationally described competencies [12]. The results showed that the study management, study guidance and student´s study paths and evaluation were important tools to make students lifelong learning more flexible with working life. In Finland, each University of Applied Sciences (UAS) is an autonomous organisation. UAS´s have different processes for managing and guiding students. There are national level standards and classifications to transfer data stored in the national repository for higher education institutions [19], but there are not common processes for student management [14], which is also reflected in the answers of project actors and teachers involved.

The quantitative data results aligned with the findings of the qualitative analysis upon review. No significant changes were observed when considering the statistical differences between the 2021 and 2023 responses. Based on the qualitative data, the study courses seemed to support working life and developed applicable competencies for the students. Among the courses, the development task and service design courses stood out positively. These courses were positively perceived as offering opportunities for collaboration and dialogue with different partners. "The development task course offers the opportunity for co-development using the concepts learned in the service design course." Earlier research [3] has shown that there are also many positive ways in digital education to engage students in their studies, allowing them to participate when it is convenient for them, and providing the possibility to combine study and work.

Limitations: The research sample is small, and results are directional.

Disclosure of Interests. There were none.

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