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Preparedness for Interprofessional Learning: An Exploratory Study Among Health, Social Care, and Teacher Education Programs

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Article abstract

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Methods and findings: This project comprised an exploratory cross-sectionalstudy and online questionnaire. Of the 221 students included, the majority hadlearned about their own future role. In contrast, less than 20 percent had learnedabout other roles.

Conclusions: This study suggests that teacher education and health and social carestudents were not equally prepared for IPL. Future research should explore howeducators may balance an unequal understanding of roles among students.

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Preparedness for Interprofessional Learning: An Exploratory Study Among Health, Social Care, and Teacher Education Programs

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Abstract

Background: Interprofessional learning (IPL) research is mainly restricted to health students. The purpose of this study was to assess the IPL preparedness of students from health, social care, and teacher education programs.

Methods and findings: This project comprised an exploratory cross-sectional study and online questionnaire. Of the 221 students included, the majority had learned about their own future role. In contrast, less than 20 percent had learned about other roles.

Conclusions: This study suggests that teacher education and health and social care students were not equally prepared for IPL. Future research should explore how educators may balance an unequal understanding of roles among students.

Keywords: Interprofessional learning; Professional roles; Health; Social care; Teacher education

Introduction

Children, young people, and their families may require the services of professionals with health and social care and teacher education backgrounds for various reasons [1-4]. For example, children and young people might have relatives who are sick, addicted, imprisoned, unemployed, or otherwise unavailable. Teachers in kindergartens and schools are often the first professionals to encounter challenges that should be dealt with interprofessionally, such as mental and physical health issues [5-7]. According to the European Commission, dilemmas related to adapted teaching for pupils who need help from several services, including health and social care services, can be solved by kindergartens and schools placing greater emphasis on interprofessional collaboration (IPC) [8,9]. IPC helps minimize undesirable events, improve teamwork and communication, and, most importantly, improve welfare service outcomes [10].

The COVID-19 pandemic has emphasized the need for better coordination and cooperation between all professionals [11,12]; a lack of interactions can result in a lack of critical information being shared and have an adverse effect on the delivery of services [13].

The goal of interprofessional learning (IPL) is to increase students' IPC skills (knowledge, attitudes, skills, and behaviours) [13,14]. Providing professionals in all

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areas of child and youth education, health, and well-being with pre-service training should prepare them to communicate and collaborate interprofessionally [2,6,9,15,16].

A frequently described barrier to the implementation of IPL, however, is the silo phenomenon [13,15]. Students in the teacher education and health and social care professions are traditionally trained in isolation from other professions [15]; IPL research has mainly been restricted to the field of health education. Notably, when including professions outside the fields of healthcare in IPL, the complexity increases. According to Henri Tajfel's [17] social identity theory, segregated education can potentially leave students vulnerable to viewing other professions as alien. This theory explains the sense of belonging and connection students feel toward members of their own profession, with the reciprocal connotation that all other disciplines must then be considered "outsiders" [18,19]. People carrying out a similar profession will likely conform to unwritten rules in their group and carry out their roles accordingly [17]. A lack of knowledge about professional roles and the inability to communicate one's own professional identity can prevent an IPC team from functioning effectively [20-23]. Although undergraduate students might feel that they understand their own future professional role, they may not be able to describe the professional roles of others. Students readiness for IPL might be influenced by their perception of their professional identity and their professional roles, underpinned by the cultural norms and expectations of their discipline [17,24]. IPL courses designed to foster IPC must therefore consider the specific learning needs of all students and enable them to understand the roles of other professionals [20,21,25]. However, data is scarce on potential gaps that might need to be addressed to ensure high IPL learning outcomes and satisfaction when students from child welfare and teacher education programs come together with students from health and social care programs.

In this article, IPL preparedness is defined as having learned about professional roles, IPC, and the end users (children and young people). The purpose of this exploratory quantitative cross-sectional study was to assess the IPL preparedness of students from health and social care and teacher education programs ahead of participation in an IPL course. The study aimed to:

1. Assess the extent to which students have learned about their own professional role, other professional roles, IPC, children and young people as end users, and observation methods.
2. Assess the extent to which student responses vary according to age and educational background.

Materials and methods

Setting

This exploratory quantitative cross-sectional study was conducted at the Oslo Metropolitan University (OsloMet) between December 18, 2018, and January 2, 2019. Data collection was performed ahead of a mandatory large-scale IPL course during the spring semester of 2019 for students from teacher education and child wel-

fare study programs and students from health and social care programs. The study was part of the Interprofessional Interaction with Children and Young People educational initiative [26], which aims to meet society's demands for the better coordination of services related to children and young people, better interaction between professionals, and better cooperation between children and young people and professionals. In 2019, the IPL course was offered for the first time as a blended learning course for students from eight different study programs (n = 1,401) [26].When planning the learning design of that IPL course in autumn 2018, there was scarce data on potential gaps that might compromise high IPL learning outcomes and satisfaction for the different student groups. In light of this knowledge gap, this exploratory study was initiated.

Participants

The participants were undergraduate students taking the following study programs at OsloMet: early childhood education and care, primary and lower secondary teacher education, physiotherapy, Mensendieck physiotherapy, nursing, social work, child welfare, and occupational therapy. The nursing and physiotherapy students were second-year students, and the others were first-year students. The IPL course was mandatory, and thus no inclusion criteria were applied.

Questionnaire

Questionnaires or scales for measuring readiness for IPL have not been translated into Norwegian, the language this study was conducted in, and nor have they been validated. It was therefore necessary to design a custom online questionnaire for this study. The questionnaire developed was based on internal student evaluations and from earlier questionnaire-based quantitative research using an anonymous self-administrated web survey: *Nettskjema* [27]. Nettskjema is a Norwegian tool for designing and conducting online surveys with customizable features. It is easy to use, and respondents can submit answers from a computer, cell phone, or tablet. University colleagues (academic and administrative) and one student tested the questionnaire and gave their feedback, and it was revised accordingly. The questionnaire was kept short because the response rate is low in internal student surveys—even short ones. Through multiple choice questions, students were asked to rate what they had learned about the following themes as part of their degree: their own future professional role; other professional roles (restricted to health and social care and teacher education); IPC in working life; children and young people in general; children and young people at risk; children and young people's rights; and observation as a method. In Norwegian legal terms, "child" refers to everyone under 18 years of age. "Young people" is often used for people up to 25 years of age [4]. The questionnaire did not include a specific definition of "children and young people at risk"; however, the term is often used broadly.

The questions were formulated as follows: "How much do you agree or disagree with the following statements, where 0 means *never* and 5 means *to a great extent*?" The responses were scored on a Likert scale from 0 to 5. The students were invited to respond to the questionnaire on December 18, 2018, through a web link

embedded in the Canvas learning management system. Reminders were not sent due to the Christmas holiday.

Data analyses

Data were presented as frequencies and percentages. Groups of participants were compared using a chi-squared test. All tests were two-sided. Results with p values below 0.05 were considered statistically significant. No adjustment for multiple hypotheses testing was applied, as the study was exploratory. The data were initially analyzed across the entire dataset and then stratified by age (< 25 years versus 25 years or older) and study program. Programs were divided into "education targeting children"—comprising early childhood education and care; primary and lower secondary teacher education; and child welfare—and "health and social care"—comprising physiotherapy, Mensendieck physiotherapy, nursing, social work, and occupational therapy. The internal consistency of the seven questions in the questionnaire was assessed using Cronbach's alpha. Statistical analyses were performed in a Statistical Package for the Social Sciences (SPSS), v25.

Ethics

Participation was voluntary and anonymous. The questionnaire did not include questions about personal health information or sensitive data. Gender was not included due to the low number of male students. The quantitative data were collected through an anonymous web survey using *Nettskjema*, which is specifically designed to meet Norwegian privacy requirements [27]. Data protection was approved by the Norwegian Centre for Research Data (reference number 741649) [26].

Results

Demographic characteristics

Table 1 shows the demographic characteristics of the 221 participants. The response rate was 16 percent. The students were taking health and social care study programs targeting all age groups (56.6%) or study programs targeting only children, young people, and their families (43.4%). Among the respondents, 45.7 percent were 21 years or younger, and 24.9 percent were 25 years or older.

Table 1: Distribution of the participants' age and study program affiliation

Variable		$N = 221$
Age	21 years or younger	101 (45.7)
	22–24 years	65 (29.4)
	25–27 years	22 (10.0)
	28 years or older	33 (14.9)
Study programme	Nursing	25 (11.3)
	Physiotherapy	39 (17.6)
	Mensendieck Physiotherapy	14 (6.3)
	Teacher Education[1]	45 (20.4)
	Early Childhood Education	33 (14.9)
	Occupational Therapy	15 (6.8)
	Child Welfare	18 (8.1)
	Social Work	31 (14.0)
	Other	1 (0.5)

Note: [1] Teachers in primary and lower secondary teacher education

Different baseline knowledge relevant to interprofessional collaboration core competency domains

The Cronbach's alpha of 0.82 showed acceptable internal con-

sistency. More than 70 percent of all students reported having learned about their own future professional role to a large or great extent (see Table 2). In contrast, only 13.5 percent and 16.9 percent responded to having learned about other professional roles and IPC to a large or great extent, respectively. The results showed that 41.4 percent had learned about children and young people in general, 26.4 percent about children and young people at risk, 39.0 percent about children and young people's rights, and 51.0 percent about observation as a method.

Table 2: Distribution of responses (*N* = 221) to the question: "How much do you agree or disagree with the following statements, where 0 means never and 5 means to a great extent: To what extent have you learned about the following as part of your degree?" *N* (%)

Question	0	1	2	3	4	5	Do not know[1]
Your future professional role?	5 (2.3)	8 (3.6)	12 (5.5)	37 (16.8)	93 (42.3)	65 (29.5)	1
Other professional roles?[2]	38 (17.7)	49 (22.8)	58 (27.0)	41 (19.1)	26 (12.1)	3 (1.4)	6
IPC?[3]	22 (10.0)	46 (21.0)	59 (26.9)	55 (25.1)	25 (11.4)	12 (5.5)	2
Children and young people in general?	11 (5.0)	24 (10.9)	49 (22.3)	45 (20.5)	38 (17.3)	53 (24.1)	1
Children and young people at risk?	28 (12.7)	39 (17.7)	51 (23.2)	44 (20.0)	34 (15.5)	24 (10.9)	1
Children and young people's rights?	28 (12.7)	34 (15.4)	37 (16.7)	36 (16.3)	43 (19.5)	43 (19.5)	0
Observation?	10 (4.7)	25 (11.7)	26 (12.1)	44 (20.6)	56 (26.2)	53 (24.8)	7

Notes: [1] Not included in the calculation of percentages; [2] Limited to the educational, social and health programmes/professions; [3] IPC = Interprofessional collaboration as is takes place in working life.

The teacher education and child welfare students (43%) reported having learned more about observation ($p < 0.001$) and about children and young people (all items $p < 0.001$), as compared to the health and social care students (57%; see Figure 1). Moreover, teacher education and child welfare students reported that they had learned more about their own future professional role ($p = 0.044$), as compared to the health and social care students.

The importance of age and the timing of interprofessional learning

When stratifying students according to age (< 25 years [57%] versus 25 years or older [43%]), younger students learned significantly less about IPC ($p = 0.022$) and tended to have learned less about other professional roles ($p = 0.077$) than the older students (see Figure 1).

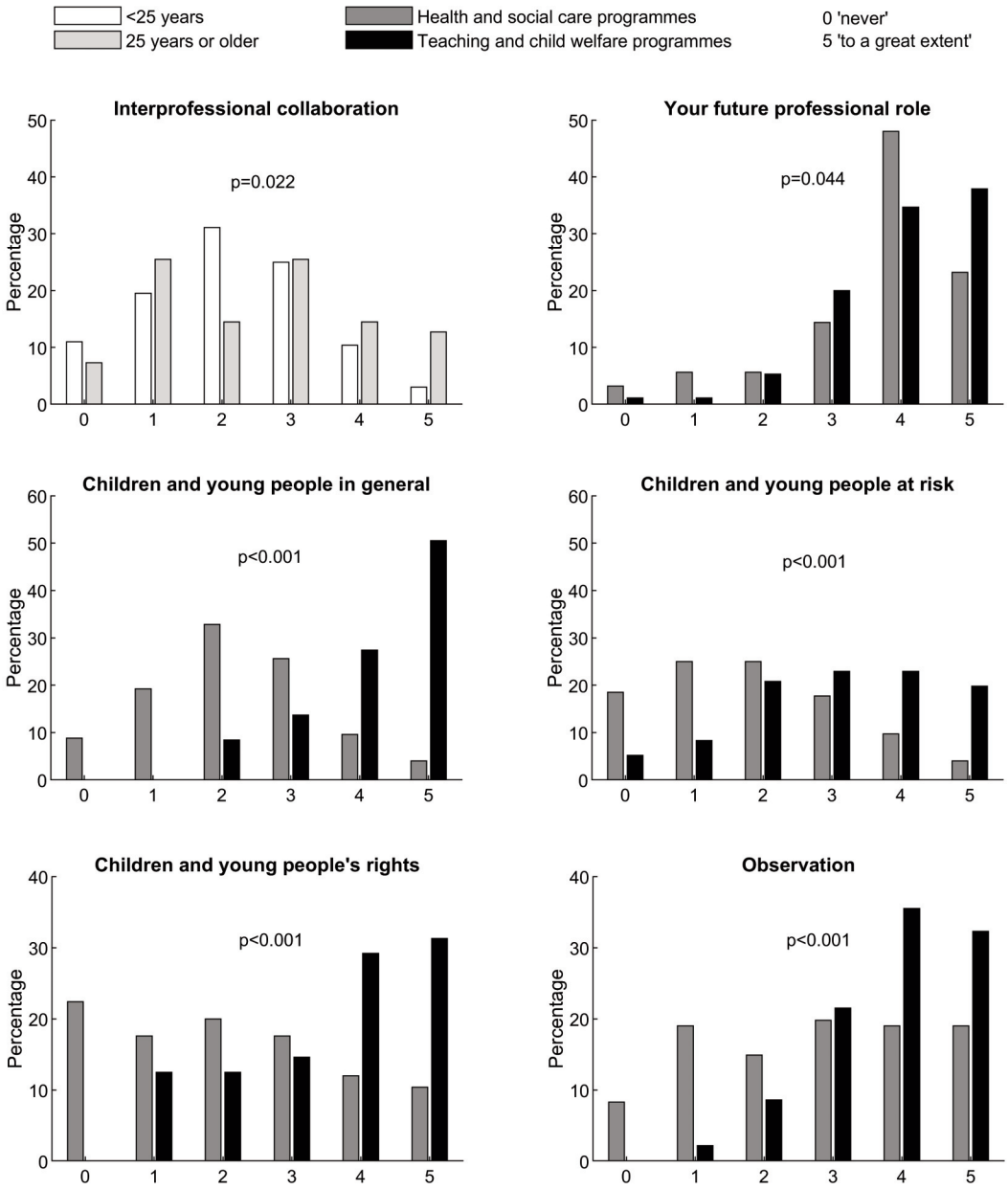

Figure 1. Distribution of responses to questions across different age and educational background groups.

Discussion

This exploratory study suggests that all students had learned more about their own future professional role than other professional roles and IPC. Teacher education and child welfare students seem to have learned more than health and social care students about their own role, whereas older students seem to learn more about IPC than younger students. This study suggests important differences among teacher education and health and social care students, and when taken together, these results suggest that students may not have been equally prepared for IPL.

Although most of these students reported having learned about their own future professional role to a large or great extent, only a few students reported having

learned about other professional roles and IPC to a large or great extent, respectively. These findings are in accordance with other studies indicating that pre-service educational professionals may have minimal knowledge of other professional roles and effective collaboration practices [1,3].

It was predicable that the students attending teacher education and child welfare study programs responded that they had a deeper knowledge base about children and young people, as compared to the health and social care students. However, it came as a surprise that teacher education and child welfare students reported that they had learned more about their own future professional role, as compared to the health and social care students. One explanation might be that these study programs have a stronger focus on building professional identity very early on. Another explanation might be that all students have had contact with teachers while growing up, and this profession might therefore be more familiar to the undergraduate students than health and social care professions. The health and social care students are preclinical, in contrast to teacher education and child welfare students.

An illness or injury can impact all of a patient's family members [28]. The number of children and young people who live with parents or relatives affected by a serious physical or mental illness is unknown. Health professionals also have a responsibility to meet the needs of the relatives of their patients, including the children [28]. The children of parents with various diseases, or who have died, experience psychosocial impacts, including anxiety and emotional and behavioural problems [28,29]. Teachers should, therefore, collaborate with professionals outside of the school, as well as parents, to support their students [8,9]. However, professional study programs do not traditionally focus on children as relatives.

Although countering child sexual abuse is a political priority for the Norwegian government [4], a recent study found that teachers do not address this topic adequately [30]. Among the explanatory factors was poor preparation in teacher education programs. The present finding that the teacher education and child welfare students reported having learned less about such topics than about children and youth in general, is in line with that study [30].

Norway [4,18] faces challenges to securing fundamental rights for all children, despite high awareness; strong legal status; and generally high levels of education, health, and social services. Laws and ethics related to clinical professions (such as health and social care) are not identical to those governing non-clinical professions.

The social identity theory relates the development of professional identity to the perceived relevance of IPL [24,31]. The theory [17] suggests an "us-versus-them" mentality. This mentality can, in turn, carry into schools, healthcare, and welfare services, where a lack of collegial understanding can compromise the care a child receives [19]. Educators should strive to ensure that students from all professional study programs are adequately prepared for shared IPL courses in order to optimize learning outcomes and, in turn, IPC. However, the individual study programs are strictly regulated, and it might not be realistic to incorporate an extra curriculum related to professional roles and IPC. However, IPL educators could include tasks aimed at balancing an unequal understanding of professional roles and IPC. On this

basis, the present study suggests providing shared IPL courses that offer challenging scenarios highlighting children's rights in different situations, thus enabling case-based discussion among students from different study programs. Students can "play" their future professional role and take note of each other's perspectives, essentially learning from, with, and about each other [10]. A case-based approach may challenge the IPL students to question their own knowledge and motivate them to seek new understanding [32] relevant to the competency domains for IPC [26,33]. There is a need for better cooperation among kindergartens/schools and health and welfare services [7,15,16,34-37]. Students often respond more positively, and see relevance more readily, when they are learning with professionals they anticipate working with [13]. Some of the present students will not work directly with children and young people as pupils, students, patients, or clients in their future jobs. However, parents may be hospitalized, imprisoned, et cetera, and thus many candidates will likely encounter children and young people as relatives [26].

The timing of IPL during the undergraduate programs has been debated [19]. All study programs have a different professional identity, culture, tradition, and syllabus, all of which may act as barriers to shared learning in IPL courses [3,38-41]. Ideally, professionals should work in an interprofessional way while maintaining their own distinct professional identities [21,42]. Some studies have considered it important to start IPL at an early stage in education, since students might be more open-minded and able to develop trust in themselves and others [25]. Previous studies have also shown that increasing age is associated with higher IPL preparedness [43,44]. It takes time to develop the skills necessary for IPC, and this data supports an early introduction of IPL in professional studies. It is not possible to exclude the possibility that external factors, such as life experience in a broader sense among the older students, may also have contributed to this finding [44].

Limitations and strengths

This study has both strengths and limitations. The response rate to surveys in general is declining, which threatens the validity and generalizability of research [45,46]. However, the number of respondents was high and students from all study programs contributed. Unfortunately, it was not possible to send out reminders as a way to increase the response rate due to a short timeline. Students at OsloMet are used to receiving evaluation surveys in their student email accounts after completing courses. Responding to a web link ahead of a course was a new experience for them. Self-selection bias may also threaten internal validity, but the diversity in the sample enhances the robustness of the findings. Future studies could use validated instruments or scales that allow comparison across courses to measure IPL preparedness. Such an instrument was not available in Norwegian for the current study. Only one IPL instrument, the Interprofessional Collaborative Competency Attainment Survey (ICCAS) published in 2020 [47], has been translated into and validated in Norwegian. However, the ICCAS is intended to measure students' self-reported competencies after IPL courses and was thus not suitable for the present study. It is not possible to make firm conclusions based on one single exploratory cross-sectional study from one university.

However, the present study's major strengths include its large and heterogeneous sample size, its diversity of disciplines involved, and the use of an anonymous online questionnaire. The finding that the teacher education and child welfare students responded to having learned significantly more about children and young people, as compared to the rest of the students, gives credibility to the rest of the responses. Several of the participating study programs are among the dominant study programs in Norway. The results may be transferable to other higher education institutions since curriculums in professional studies are strictly regulated.

Conclusion

Students across eight different study programs reported learning about their own respective professional roles in this study; to a lesser extent, they reported learning about other professional roles, IPC, children and young people at risk, and children and young people's rights. The students in teacher education and child welfare programs had learned statistically significantly more about their own respective future professional roles, observation as a method, and children and young people than the students taking health and social care programs. The younger students seem to have learned less about IPC. This data suggests that students may have different prerequisites for IPL, and potentially for IPC, when they become future welfare state professionals working with children and young people.

No comparable study has been conducted in Norway, and the results, although provisional, call for replication in larger samples with a stronger survey instrument. Since curriculums in professional studies are strictly regulated, these results may be transferable to other higher education institutions.

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Abbreviations

IPC = Interprofessional collaboration
IPL = Interprofessional learning

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