

Article

Supervisors' Perspectives on Online Interprofessional Supervision: Results from a Mixed-Methods Longitudinal Cross-Sectional Study

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Abstract: Collaboration in interprofessional collaboration (IPC) teams is a part of working in welfare services. Unlike uniprofessional supervision, interprofessional supervision involves supervisors and students with different educational backgrounds. This study explores 105 supervisors' responses after synchronous supervision of 15,700 students from teaching, health, and social work education programs who participated in an annual preservice interprofessional learning (IPL) course from 2018 to 2022. The purpose was to explore supervisors' experience of the online IPL supervisor role and of the student's learning outcomes through a longitudinal mixed-methods repeated design. Response rates: 61%, 45%, 82% and 40%, respectively. The students worked in IPL groups with limited interaction with supervisors, using a case-based learning approach. The supervisors were supportive of IPL but suggested changes to increase relevance. The imbalance in the knowledge base on child-related topics and IPL preparedness among the student groups was challenging. Some questioned the need for supervision, whereas others were concerned about the limited time allocated for supervision. We conclude that online supervision is forward-looking because candidates must prepare for helping users, such as children and their next-of-kin, online. We deduce that online supervision is relevant for the future and less complicated than IPL supervision

Keywords: mentors; teacher training; child; interprofessional education; education; distance; nursing; professional role; communication; child welfare



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1. Introduction

1.1. Interprofessional Supervision

Interprofessional learning (IPL) occurs when “two or more professionals learn about, from, and with each other to enable effective collaboration and improve health outcome” [1]. Collaboration in interprofessional (IPC) teams is a large part of the job for professionals working in welfare services [2,3], and IPL is often structured so that students from different study programs work together in groups to ‘learn about, from, and with each other’ [1,4]. Terminology concerning supervision and supervisors is confusing, as terms such as ‘supervisor,’ ‘mentor,’ ‘tutor,’ and ‘facilitator’ are used interchangeably [5]. In traditional uniprofessional supervision in health, social care, and teacher education programs, the supervisor and the students share the same professional background and training [6]. There are many definitions of interprofessional supervision [7], such as the following, which was introduced by Townend [8] in 2005:

“Interdisciplinary [interprofessional] supervision can be defined as two or more [practitioners] meeting from different professional groups to achieve a common goal of protecting

the welfare of the client. This protection is achieved through a process that enables increased knowledge, increased skill, appropriate attitude and values ... to maintain clinical and professional competence.” (p. 586) [8]

Supervision of IPL groups is similar in theory and practice to that of uniprofessional supervision of student groups, with the fundamentals remaining the same in planning and activity design [9]. Students showing up to late, being not prepared, speeding up to finished early, or dominating their peers in the group are challenging regardless of the supervision delivery mode and setting [9].

Literature Review on Online Interprofessional Supervision in Higher Education

In online mode, the interaction between the supervisor and the students may be affected by a changed prerequisite for both non-verbal and verbal communication [10]. Previous ‘normal’ group dynamics may change once online [11]. Students are more likely to feel inhibited and withdraw, or potentially become disinhibited and overshare or dominate the online space [11]. Even in an online learning environment, the physical online learning environment may be affected by factors such as noise, lighting, and movements, and the social learning environment may be inhibited by students turning off their cameras or muting their microphones. During online supervision, it is also physically impossible to look the students in the eye, and an increased risk of “Zoom fatigue” may occur not only among students, but also among online supervisors. Issues with confidentiality and privacy may be relevant. However, benefits of online supervision include flexibility, ease of access, cost-effectiveness, and increased diverse experiences and collaboration brought into the virtual classroom [10]. Although the learning environment is altered in online education, only a few studies have examined the perspectives of supervisors who practice online interprofessional supervision, or even on online uniprofessional supervision [10,12].

Sherbersky et al. [11] targeted family therapists and their trainees in mental health care and highlighted that supervisors must be equipped with new online competencies to prepare professional students for their future ways of working online with families. A small qualitative study on health and social care students by Kvilhaugsvik et al. [5] recommended a very close follow-up of students and concluded that students’ IPL outcomes depend on which tasks are defined as the responsibility of the supervisors. By contrast, Prasolova-Førland et al. showed that interprofessional interaction between students and teachers was mainly restricted to technical issues [13]. These authors highlighted that clarity in the preparation and presentation of the virtual delivery mode may reduce the need for teachers’ presence in virtual IPL.

1.2. Interprofessional Interaction with Children and Youth (INTERACT)

For several reasons, children, young people, and their families are dependent on cooperation with and between welfare state professionals to optimize their conditions for daily life, wellbeing, and learning, as well as health and social care [14–19]. According to Tuominen et al.’s [20] 2022 systematic review, there is a lack of knowledge regarding education-related interdisciplinary collaboration among health, social, and teacher higher education professionals. The authors also reported that only two studies [21,22] have investigated the online delivery mode among learners from health, social, and teacher education programs, although limited by using curriculum content from health and social care study programs [20]. Health, social, and teacher education study programs have different jurisdictions, taxonomies, traditions, and core tasks, which may create silo-like divisions of professional responsibilities and influence the delivery of welfare services [23,24]. Tuominen et al. [20] highlighted the knowledge gap in various aspects of bringing numerous and heterogeneous professional study programs together in complex IPL, regardless of delivery mode.

In 2018, a large-scale IPL initiative (Interprofessional Interaction with Children and Youth, INTERACT) was launched with the aim of providing students with knowledge of and experience with interprofessional cooperation as well as interprofessional expe-

rience [19]. The project extended IPL beyond health and social care to include teacher education and child welfare students, because these professions must collaborate in real-life situations around children, young people, and their families. Several studies have investigated the blended learning delivery mode [25–31], although only one explored the perspectives of supervisors based on in-person IPL supervision on campus [25]. The study was based on the experience of supervising approximately 1500 first-year curriculum students in face-to-face IPL groups on campus. Over 90% of the supervisors (n = 39, response rate 61%) agreed that the blended learning IPL course was relevant for professional practice when working with children, young people, and their families [25].

1.2.1. Transformation from Face-to-Face IPL Groups to the Online Delivery Mode

The INTERACT project was an innovative digital spearhead established in 2018, prior to the pandemic, with the aim of using technology for pedagogical purposes and combining digital tools with face-to-face activities [19]. Due to the increasing student volume, the organizers of INTERACT decided to fully digitalize the IPL starting from 2020/21 study year. Thus, a well-planned digital transformation was coincidentally timed with the pandemic outbreak lockdown measures.

1.2.2. The Curriculum

Enrollment of the different study programs in the INTERACT project was gradual [19], starting with only first-year students. By 2021, the students comprised first-, second-, and third-year students. Students participated in annual IPL seminar days each year for three curriculum years, and communicated and collaborated in small IPL groups that targeted future IPC among children, young peoples, and their families as end users [19].

The INTERACT curriculum is based on an approach of the same topics repeated throughout the annual IPL courses with an increasingly advanced level [19], and a case-based learning design [32,33]. Case-based learning is encouraged in professional education [33], because it has been shown to facilitate active learning strategies that promote critical thinking and relational agency through meta-learning [32,34,35]. According to Thistlethwaite et al. [33]: *“The goal of CBL [case-based learning] is to prepare students for clinical practice, through the use of authentic clinical cases. It links theory to practice, through the application of knowledge to the cases, using inquiry-based learning methods.”* Thistlethwaite et al. [36] further indicated that ‘the rationale for IPL is that learning together enhances future working together,’ because bringing students together in case-based IPL group work to discuss relevant real-world examples. The curriculum approach aims to break down educational trajectories and cover the overall curriculum, and the iterative revisiting of topics is particularly relevant in outcome-based education [37,38]. The intention of the curriculum is to return to the same topic on several occasions, and each time, the topic should be learned at a deeper and more complex level; thus, prior knowledge should be the foundation rather than starting anew [38]. It has its roots in the constructivist learning framework, and Biggs’ constructive alignment theory [39]. It aims to enhance student learning, as it activates prior knowledge, initiates interest, and reinforces learning [37,38,40–44]. Therefore, INTERACT is based on a theoretical framework that moves between activity theory and sociocultural learning theory [19,45,46]. Activity theory emphasizes a human being as a creative and collaborative being. Knowledge and learning happen through social interaction [47]. Based on a sociocultural learning perspective, the learner learns in a social, collaborative, cultural, and historical context. Mediated learning is a central concept and activity within sociocultural learning theory. In this learning process, certain tools and signs are in play [19].

According to Edwards [35] relational agency includes working with others with the intention to improve solutions to complex problems, which may induce ‘common knowledge’—that is, an understanding of important issues for other participants in interprofessional collaboration. The reflexivity of individual students coalesces into the entire IPL group’s reflexivity and becomes the dynamic force that drives the group’s work

forward. When the IPL group work builds on constantly new parts due to the case and case scenarios gradually becoming more complex, the group's reflexivity, according to social realist theory, will help differentiate and clarify the complex part of reality being tackled by the group works [32,34,48].

1.3. The Pedagogical Background of Supervision

Supervising or mentoring is based on knowledge from practical traditions within various craft traditions, from practical educational activities, and from theoretical subject areas building knowledge from various scientific areas [49]. Bjerkholt's [50] study of mentoring sessions between newly qualified teachers and local mentors underlines four principles regarding content and dialogue in these sessions:

- (1) *The relationship between the newly qualified teachers and their mentors in mentoring sessions is important for the newly qualified teachers to benefit from these conversations.*
- (2) *The participants need to establish a common goal for mentoring.*
- (3) *The mentees and the mentors view the mentoring sessions as covering important issues.*
- (4) *The topics are reflected upon from various perspectives, where the teacher's values, skills, and knowledge play an important part.*

Beyond these principles, Eriksen and Gradovski [51] identified a certain risk of asymmetry and resistance in dialogues between social work students and supervisors. The supervisor is responsible for creating a communicative atmosphere based on equality and trust between the mentees and the mentor [52], with the aim of achieving better professional practice through dialogue and reflection. It is understandable that the supervisor plays a decisive role in achieving this aim.

Against this background, we investigated longitudinal data from 105 interprofessional supervisors during the 2018–2022 academic years. Our purpose was to explore supervisors' experience of the online supervisor role and of the student's learning outcomes in an IPL course through a longitudinal mixed methods repeated design.

2. Materials and Methods

2.1. Design and Participants

This was a repeated mixed-methods cross-sectional study with data collected in the academic years 2018/19 and 2019/20 (blended learning delivery mode) and in 2020/21 and 2021/22 (online delivery mode). Data from the pre-pandemic cohorts have been previously published [25–31]. Briefly, undergraduate students from various health, social, and teacher professional study programs at Oslo Metropolitan University (OsloMet) in Norway participated in an annual IPL course integrated into the student curriculum and delivered through the learning management system (LMS) Canvas [19]. There are three interprofessional modules in the curriculum [19], one in each curriculum year of study, as most undergraduate study programs are for 3 years. The curricula throughout the three years of IPL consist of three elements: (1) a shared knowledge platform (first year, two seminar days), (2) explorative communication with children (second year, two seminar days), and (3) interprofessional practice involving children, youth, and their parents (third year, two seminar days) (the total workload is estimated to six European Credit Transfer System, ECTS). Even if each year of study has a particular focus, the elements are not isolated items but rather parts of an integrated approach. The full-fledged IPL course fully are delivered according to initial (first curriculum year), intermediate (second curriculum year), and final (third curriculum year) levels of learning outcome on IPL/IPC and child-related topics [19].

Enrollment of the different study programs was gradual, starting with only first-year students. By 2022, the students comprised first-, second-, and third-year students. The students, separated by curriculum year of study, worked synchronically in pre-defined student-led IPL groups, discussing case-based learning materials and tasks [19]. The interprofessional student groups were set up by the INTERACT administrator. Each group consisted of eight students and groups were set up to ensure representation from healthcare,

education and social science programs by means of Excel spreadsheets [25]. When the groups met the students spent the first session on formulating a group contract. During the two seminar days the students were introduced to different groups roles and were explained how they should take turns taking on the different groups roles.

A specially prepared fictional complex case involving real-life situations and scenarios that included family members and different professionals was embedded in Canvas together with tasks to be solved among the students. The case was presented on a Padlet, which is a commonly available online notice board. Post notes contained links, videos, images, and document files, and allowed the students to collaborate online. The intention was that students who have distinctive knowledge bases develop a mutual understanding of how to work together in future professional environments. The complexity increased annually, as recommended [32]. In the case-based IPL discussions, we emphasized that the students should 'play their future professional role' and take note of each other's perspectives [25]. Such case-based discussions did not have a 'correct answer' but were designed to challenge the students to question their own knowledge and motivate them to seek new understanding. This reflects a student-centered form of teaching, in which the students' learning needs are at the center of the course design and delivery, with the idea of building knowledge for the future and an immediate purpose of creating engagement among students [19,32].

Due to the nature of the implementation, the IPL course description was broad, allowing adjustments to be made [25]. Although delivered as blended learning, the student groups met in the morning on campus in face-to-face IPL groups with no prior plenary sessions in academic years 2018/2019 and 2019/20. The blended learning deliveries required simultaneous reservation of rooms for around 200 IPL groups on campus in several buildings. During on-campus deliveries, the supervisors met with the groups in rooms where the students worked. The time spent synchronously supervising each group was limited to 45 min. The digital transformation in 2020/21 was well planned, and not an emergency remote delivery [53–55]. Zoom was used as the platform. In 2020/21, students met in breakout rooms to get practical information and connect with group members [53]. In 2021/22, the students met for a 15 min introduction to the themes for each of the IPL courses. The plenary session held in 2021/22 was included based on student evaluations from the previous year. In 2020/21, the supervisors' work was changed from face-to-face supervision to online supervision. The time of synchronous supervision for each student group was unchanged and limited to 45 min. The supervisors made a schedule for supervising and invited themselves into student-breakout rooms. Neither students nor supervisors and student groups had met before. Although the organization had its weaknesses, this mentoring situation represented working life relevance: all professionals meet for the first time several times, and their collaboration time is often limited.

Supervisors were recruited from teaching staff, master's program students, and professionals working in the field. They were offered supervision courses and information meetings ahead of the IPL course. These courses had a double purpose: (1) information about INTERACT and (2) IPL supervision. To ease the recruitment of IPL supervisors, the study programs of the teaching staff received payment for both the number of IPL groups the supervisor supervised and ECTS. Master's program students and professionals working in the field were paid per number of groups they supervised. All IPL groups received a visit by a supervisor, meaning that first- and third-year students were offered the same duration of supervision. The assignment of IPL groups to the supervisors did not depend on the educational background of the supervisors, because the assignments was random. Interaction between the IPL groups and their supervisors was supplemented by email and telephone before the pandemic lockdown. The role of the supervisors was to help the IPL groups achieve the learning outcome within each curriculum year. The supervisor's role was to be available for questions, challenge the group members on how they worked interprofessionally and stimulate deeper reflections on a least one of the topics the supervisor discussed with the group.

Initially, the required coursework included participation in a two-day seminar (working in the IPL groups only with no plenary activities) the submission of an IPL group assignment, and extra IPL group meetings, if needed [19,25]. The group assignment aimed to link the seminar days, coursework assignments and the syllabus, and could be submitted as a podcast, a video or an academic text [31]. The assessment criteria were identical for all the assignment tools, and specially prepared for INTERACT. The supervisor either approved or failed the groups' coursework and could also provide each group with asynchronous feedback on their assignments, uploaded in LMS Canvas. The students and most of their supervisors preferred podcasts as assignment tool over written text or videos [31]. Activities outside the seminar days, were removed in 2019 due to the high complexity of this IPL intervention. Moreover, both the first-year students and the supervisors evaluated that the learning outcome from the synchronous activities during the seminar days gave much higher learning outcome than the syllabus, assignment, and supervision. After feedback from students, stakeholders, educational activities and content during the seminars were also adjusted along the way [25,31]; however, the major task of the supervisors, which was to talk to the students while synchronically working in the IPL groups, was not changed. The only eligibility criterion was being an IPL supervisor.

2.2. Online Questionnaires

At the end of each IPL course, supervisors were contacted by email and invited to participate in an anonymous specially prepared course evaluation administered online. The purpose of the survey was double: (1) to examine supervisors' experiences and receive feedback to improve the educational intervention along the way; (2) research.

When the repeated cross-sectional design was initiated back in 2018, no validated suitable questionnaire was available in the Norwegian language. Thus, questions were specially prepared and developed according to the aims of the different pre-pandemic studies. Indicator questions were constructed to cover all students across study programs, curriculum years, and academic years, as well as the learning outcomes described in the course descriptions, and these questions were also included in the supervisors questionnaires. These questions were designed as indicators or to target quantitative characteristics of both the respective curricula of the individual study programs and the IPL curricula. Additional questions were constructed to cover supervisors across educational backgrounds and working experience. Drafts were discussed among colleges (academic and administrative units) and accordingly revised. We wanted to keep the questionnaire as short as possible due to the risk of dropouts. Given that the established data collection was a sustainable approach in circumstances in which we needed answers beyond the initial projects, such as the relevance of COVID-19 pandemic measures to higher education [56], new questions were added after the first delivery [54]. Due to the everchanging situation and time constraints as a result of pandemic measures and adjustments, no pilot test was performed. Several of the indicator questions were initiated back in 2018 and repeated in the period 2018–2022. A closer description of the indicator questions are provided elsewhere [55].

The supervisors were asked identical, closed-ended questions using a scale 0–5 based on previous questionnaire-based quantitative research using an anonymous self-administrated web tool, "Nettskjema" [25,34]. Closed questions with predefined alternatives were selected to ensure comparability, simplicity, and neutral non-leading language. The supervisors were also asked to elaborate on their answers in open-ended responses, following up on the closed questions. Open-ended responses were used to explore and understand the participants' experiences and perspectives. Some of these questions were leading (following up on the closed questions), whereas others were not leading questions. An open-ended question in a survey poll is a question in which possible answers are not suggested, and the respondents answer in their own words; these questions facilitate a spontaneous response [57]. Additionally, they were asked to report demographic data (age group and educational background). The responders wrote their answers on a computer or mobile phone. Nettskjema is easy to use, and respondents can submit answers from

a browser on a computer, mobile phone, or tablet. In addition, it is specifically designed to meet Norwegian privacy requirements. The online questionnaire was sent out to the supervisors via email. Reminders were sent to increase the response rate.

2.3. Data Analysis

Quantitative data are described descriptively with numbers and percentages. Quantitative data were extracted directly from the survey system. Given that the number of participants each academic year was low, some of the questions were not completely identical, responses were missing due to the questions being non-mandatory, the distribution of responses (scale 0–5) was skewed; the responses were dichotomized to either “agree” (score 3–5) or “disagree” (score 0–2). Apart from this re-categorization of response categories, no statistical analysis was performed. Free-text responses following the closed questions were used to elaborate on the quantitative data. All three researchers read through all the responses for familiarization with the data, and the themes were discussed. The analyses were performed starting with 2018/19 and ending with 2021/22 responses. The responses were analyzed using a simplified thematic analysis approach following Braun and Clarke [58], identifying and reporting themes within the material. Searching for the themes and reviewing them was an overlapping process, consisting of reading all text responses again for possible rearranging. Only quotes relevant to the aim were included before defining and naming the themes.

2.4. Ethics

The Ethical Guidelines for Research at OsloMet were followed [59]. These guidelines are based on the Act related to Universities and University Colleges for Ethics and Integrity in Research and pursuant regulations and are related to the ethical norms prepared by the Norwegian National Committees for Research Ethics. The study did not include information about the health of respondents or others, and it was therefore not necessary to apply to the Regional Committees for Medical and Health Research Ethics (REC). It was also deemed unnecessary to inform the Norwegian Centre for Research Data (NSD), as the study did not involve collecting personally identifiable information. However, we did send a request to NSD (NSD reference number 741649) and was given confirmation that the study was not subject to reporting requirements. The data were collected from an anonymous online survey using Nettskjema [60], in line with ethical guidelines [59]. All participants were over 18 years old and received written information about the study beforehand on the LMS Canvas. Gender was not included due to the low number of males. The respondents’ voluntary participation and anonymity were emphasized, and they were informed about the study’s purpose and how the data would be used. Information was provided at the start of the questionnaire about the purpose of the study and what the student’s participation entailed, and it was stated that all data collected would remain anonymous. Answering the questionnaire was considered informed consent to participate. The students could withdraw at any time by not logging into or logging out of Nettskjema before answering the questionnaire without any consequences for them as students. The participants’ informed consent included the publication of anonymized responses. The study complies with the Declaration of Helsinki.

3. Results

3.1. Demographic Data

In total, 105 supervisors contributed to this research (Table 1). The majority were 41 years older, and they had educational backgrounds within a variety of professional studies. The majority had previous working experience with children, young people, and their families, and with IPC. Less than half had been IPL supervisors before the pandemic. The response rates were 61% (n = 39) in 2018/19, 45% in 2019/20, 82% in 2020/21 and 40% in 2021/22.

Table 1. Supervisor sample, n (%).

| | 2018/19 (n = 39) ¹ | 2019/20 (n = 13) | 2020/21 (n = 32) | 2021/22 (n = 21) |
|---|----------------------------------|---------------------|---------------------|---------------------|
| Age (years) | | | | |
| 30 or younger | 3 (8) | 1 | 6 (19) | 6 (29) |
| 31–40 | 8 (21) | 3 | 7 (22) | 1 (5) |
| 41–60 | 22 (56) | 0 | 13 (41) | 8 (38) |
| 61 or older | 6 (15) | 9 | 6 (19) | 6 (29) |
| Study program | | | | |
| Early Childhood Education and Care | 6 (15) | 3 (23) | 1 (3) | - |
| Child Welfare | 6 (15) | - | 1 (3) | - |
| Occupational Therapy | 1 (3) | - | - | - |
| Teacher Education in | | | | |
| Art and Design | - | 1 (8) | 3 (9) | 2 (10) |
| Physiotherapy ² | 1 (3) | 3 (23) | 1 (3) | 1 (5) |
| Teacher Education ³ | 10 (26) | 5 (39) | 13 (41) | 6 (29) |
| Social Work | 2 (5) | - | 2 (6) | 4 (19) |
| Nursing | 3 (8) | 1 (8) | 5 (16) | 6 (29) |
| Social Education | 2 (5) | - | - | - |
| Other | - | - | 6 (19) | 2 (10) |
| Working experience with children and young people | | | | |
| with interprofessional collaboration | | | 30 (94) | 17 (81) |
| Other | | | 29 (91) | 19 (90) |
| | | | 31 (97) | 20 (95) |

¹ Data from the 2018/19-supervisor survey were previously published [25]; ² Mensendieck physiotherapy and physiotherapy; ³ Primary and Lower Secondary Teacher Education.

After the transformation to online learning, we asked the supervisors if they had been supervisors in the blended learning delivery mode as well. Among the supervisors in 2020/21, less than half had also been supervisors in the blended learning delivery mode. Among the supervisors in 2021/22, less than 1/3 responded that they had also been supervisors in blended learning delivery mode. Among these latter supervisors, 38% were also supervisors in 2020/21.

3.2. Quantitative Data

3.2.1. The Supervisor's Role and Experience

Among the supervisors in the 2019/20 academic year, 39% responded that they did not have previous experience with online supervision and teaching (Table 2). Among the supervisors who responded in the following two years (during online delivery mode), 75% and 33% responded that they did not have previous experience with online supervision. In 2020/21, most supervisors disagreed that they lacked training in online supervision (60%) and that they needed to increase their digital competence (69%). In 2021/22, these numbers turned around 37% and 25%, respectively. Across academic years, more than half agreed that the online supervisor role is different from the traditional supervisor role.

Table 2. Distribution (%) of responses among supervisors in academical years 2019/20 (n = 13), 2020/21 (n = 32) and 2021/22 (n = 21).

| Variables | Academic Year | “Disagree” (Score 0–2) | “Agree” (Score 3–5) | Do Not Know |
|--|---------------|---------------------------|------------------------|-------------|
| I had pre-pandemic experience with online supervision | 2019/20 | 39 | 61 | |
| | 2020/21 | 75 | 25 | |
| | 2021/22 | 33 | 52 | 14 |
| I had pre-pandemic experience with online teaching | 2019/20 | 54 | 46 | |
| | 2020/21 | 69 | 31 | |
| | 2021/22 | 38 | 48 | 14 |
| I lack training in online supervision | 2020/21 | 60 | 40 | |
| | 2021/22 | 37 | 63 | 0 |
| I need to increase my overall digital competency | 2020/21 | 69 | 31 | |
| | 2021/22 | 25 | 75 | 0 |
| The traditional supervision role is no different from the online role ¹ | 2019/20 | 23 | 77 | |
| | 2020/21 | 43 | 57 | |
| | 2021/22 | 37 | 52 | 11 |

¹ In 2019/20, the question targeted ‘blended’ and not ‘online’.

3.2.2. Regarding the IPL Deliveries

Overall, the supervisors were positive about the content/activities (Table 3). Approximately 1/3 disagreed that the students had prepared themselves before IPL. The majority agreed that students did not turn on their cameras, and that the learning outcome was reduced in online setting. They were also supportive of the use of a breakout room as a training arena for various purposes, although approximately 10% believed that breakout rooms were suitable for students to get to know other students. The supervisors agreed that the learning outcome in breakout rooms was higher than in plenary lectures. The responses to the question about learning outcome in breakout rooms compared to face-to-face groups were divided, and nearly half answered that they did not know in 2021/22. Regarding the use of the spiral curriculum and the case-based learning, supervisors were supportive.

Table 3. Distribution (%) of responses among supervisors in academical years 2019/20 (blended learning with face-to-face group meetings on campus, n = 13), 2020/21 (online learning, n = 32) and 2021/22 (online learning, n = 21).

| Variables | Academic Year | “Disagree” (Score 0–2) | “Agree” (Score 3–5) | Do Not Know |
|---|---------------|---------------------------|------------------------|-------------|
| Regarding the deliveries: | | | | |
| The online learning resources were relevant | 2019/20 | 8 | 92 | |
| | 2020/21 | 0 | 100 | |
| | 2021/22 | 0 | 95 | 5 |
| The tasks were relevant to professional practice | 2019/20 | 8 | 92 | |
| | 2020/21 | 0 | 100 | |
| | 2021/22 | 0 | 90 | 10 |
| The collaboration in the online groups ¹ worked well | 2019/20 | 0 | 100 | |
| | 2020/21 | 0 | 100 | |
| | 2021/22 | 5 | 90 | 5 |

Table 3. Cont.

| Variables | Academic Year | “Disagree” (Score 0–2) | “Agree” (Score 3–5) | Do Not Know |
|---|---------------|------------------------|---------------------|-------------|
| The students had prepared themselves | 2019/20 | 39 | 61 | |
| | 2020/21 | 39 | 61 | |
| | 2021/22 | 33 | 33 | 33 |
| The online tools worked well | 2020/21 | 0 | 100 | |
| | 2021/22 | 0 | 95 | 5 |
| No students had ‘black screens’ | 2020/21 | 26 | 74 | |
| | 2021/22 | 38 | 57 | 5 |
| All the students spoke in the online group | 2020/21 | 0 | 100 | |
| | 2021/22 | 14 | 80 | 10 |
| Regarding the online delivery mode | | | | |
| The learning outcome is reduced in online mode | 2020/21 | 52 | 48 | |
| | 2021/22 | 62 | 24 | 14 |
| Online group work in breakout rooms ¹ produced higher learning outcome than plenary lectures would have done | 2019/20 | 8 | 92 | |
| | 2020/21 | 3 | 97 | |
| | 2021/22 | 5 | 81 | 14 |
| Online group work in breakout rooms produced higher learning outcomes than physical groups on campus | 2019/20 | 85 | 15 | |
| | 2020/21 | 42 | 58 | |
| | 2021/22 | 24 | 33 | 43 |
| Online interprofessional group work in breakout room in preservice training is well suited for students to: | | | | |
| Discuss neutral topics | 2020/21 | 6 | 92 | |
| | 2021/22 | 5 | 85 | 10 |
| Discuss sensitive topics | 2020/21 | 3 | 97 | |
| | 2021/22 | 5 | 90 | 5 |
| Learn with, from and about other students | 2020/21 | 3 | 97 | |
| | 2021/22 | 5 | 85 | 10 |
| Get to know other students | 2020/21 | 9 | 91 | |
| | 2021/22 | 10 | 85 | 5 |
| Training on online collaboration | 2020/21 | 3 | 97 | |
| | 2021/22 | 0 | 95 | 5 |
| Simulate interprofessional collaboration with other professions | 2020/21 | 6 | 94 | |
| | 2021/22 | 0 | 95 | 5 |
| Succeed in future interprofessional collaboration | 2020/21 | 6 | 94 | |
| | 2021/22 | 0 | 95 | 5 |
| Regarding the curriculum | | | | |
| The progression in the various themes builds up in a natural way | 2020/21 | 0 | 100 | |
| | 2021/22 | 0 | 100 | |
| The case worked well as part of curricula | 2020/21 | 3 | 97 | |
| | 2021/22 | 6 | 94 | |
| Spiral learning as a principle was successful | 2020/21 | 0 | 100 | |
| | 2021/22 | 0 | 100 | |

¹ In 2019/20, the question targeted ‘blended’ and not ‘online’.

3.2.3. Regarding Learning about Child-Related Topics and IPL/IPC

Across academic years, most supervisors agreed that the students had learned about the respective child-related topics after the IPL course (Table 4). By contrast, the responses

were somewhat more divided with respect to the IPL/IPC variables, although overall positive.

Table 4. Distribution of responses among supervisors in academical years 2019/ 20 (n = 13), 2020/21 (n = 32) and 2021/22 (n = 21), %.

| Variables | Academic Year | “Disagree” (Score 0–2) | “Agree” (Score 3–5) | Do Not Know |
|--|---------------|---------------------------|------------------------|-------------|
| Students learning outcome was high: | | | | |
| Children in general | 2019/20 | 0 | 100 | |
| | 2020/21 | 6 | 92 | |
| | 2021/22 | 0 | 95 | 5 |
| Children as next-of-kin | 2019/20 | 8 | 92 | |
| | 2020/21 | 11 | 89 | |
| | 2021/22 | 5 | 90 | 5 |
| Vulnerable/at-risk children | 2019/20 | 0 | 100 | |
| | 2020/21 | 6 | 94 | |
| | 2021/22 | 0 | 95 | 5 |
| Children’s rights | 2019/20 | 0 | 100 | |
| | 2020/21 | 6 | 94 | |
| | 2021/22 | 0 | 90 | 10 |
| Their own future professional role | 2019/20 | 23 | 77 | |
| | 2020/21 | 6 | 94 | |
| | 2021/22 | 5 | 90 | 5 |
| Other professional roles/study programs | 2019/20 | 0 | 100 | |
| | 2020/21 | 6 | 94 | |
| | 2021/22 | 5 | 85 | 10 |
| Interprofessional collaboration as it takes place in working life | 2019/20 | 8 | 93 | |
| | 2020/21 | 3 | 96 | |
| | 2021/22 | 10 | 76 | 14 |
| Values and ethics ¹ | 2019/20 | 15 | 85 | |
| | 2020/21 | 3 | 97 | |
| | 2021/22 | 0 | 90 | 10 |
| Roles and responsibilities for collaborative practice ¹ | 2019/20 | 8 | 93 | |
| | 2020/21 | 0 | 100 | |
| | 2021/22 | 0 | 100 | 0 |
| Teams and teamwork ¹ | 2019/20 | 0 | 100 | |
| | 2020/21 | 0 | 100 | |
| | 2021/22 | 0 | 100 | 0 |
| Interprofessional communication ¹ | 2019/20 | 0 | 100 | |
| | 2020/21 | 3 | 97 | |
| | 2021/22 | 5 | 90 | 5 |
| Observation as a method | 2019/20 | 0 | 100 | |
| | 2020/21 | 6 | 94 | |
| | 2021/22 | 5 | 81 | 14 |
| Verbal communication | 2020/21 | 3 | 97 | |
| | 2021/22 | 0 | 90 | 10 |
| Nonverbal communication | 2020/21 | 41 | 59 | |
| | 2021/22 | 0 | 76 | 24 |

¹ adapted from [34], translated from the interprofessional Education Collaborative (IPEC) [4,61].

3.3. Qualitative Data

The supervisors were also asked to elaborate on their answers in questions, following up on the closed questions. We identified the themes below.

3.3.1. Delivery Mode

In 2018/19, none of the supervisors commented on the delivery mode, that is, no one questioned back then if physical supervision face-to-face on campus was the most efficient way to supervise. Several of the supervisors complained about the amount of time spent moving physically between the groups they supervised (rooms for the IPL groups had to be booked in several different buildings on campus), but the only suggested improvement was making it easier for the supervisors by having the students come to the supervisors. By contrast, the online delivery mode had more comments. Some of the supervisors expressed a strong belief that physical face-to-face meetings with the students would result in better learning outcomes, whereas others preferred online delivery. There were many comments about improving the online delivery, such as including a short video on how to connect to Zoom. Others expressed great concern for the students' wellbeing being deprived of meeting physically, as represented by the following pragmatic quote:

"I feel sorry for the students and understand that their situation is demanding. They miss the social aspect. However, I think the university has done what's possible given the current situation." (2020/21)

Some supervisors indicated that online delivery made it easier for students and supervisors:

"Online meetings were much better use of time for everyone commuting. The students were more engaged online and not so obsessed by finishing early." (2020/21)

Others emphasized that meeting face to face was necessary to obtain a high learning outcome, insisting that supervision should be face-to-face as would be experienced in working life. However, some acknowledged that many meetings in students' future working life take place online.

3.3.2. Online Skills

After transforming the IPL delivery to online learning, some of the supervisors expressed concern for the student's lack of online skills. One supervisor responded:

"I experienced those students needed more online than professional supervision." (2020/21)

Others were concerned about the level of their own online skills, and variation in motivation among student groups and students:

"The group was uneven. The group members were unable to uplift each other." (2019/20)

3.3.3. The Student Groups Required Little Supervision

Some supervisors commented that the groups seemed to work well without supervision, and the supervisors questioned whether they were needed. Such comments were expressed by supervisors in both delivery modes. Others said that they felt obliged to supervise but often asked the students to call on them at a time suitable for the groups. One supervisor responded:

"Students need little supervision. They could be challenged on how to use supervision, which is important in their professional lives." (2021/22)

3.3.4. Curriculum and Case-Based Learning

Among the supervisors who had supervised students from all three curriculum years, the most prominent responses were that the students did not remember the case scenario from the previous year, that the case was not perceived as relevant to all professions, and that the knowledge base in child-related topics in the IPL groups was uneven. Some indicated that having the same group composition each year would have been preferable since the students discussed the same case family throughout the curriculum years. These quotes illustrate these notions:

“Some of the studies, for example occupational therapy and physiotherapy, found it difficult to contribute professionally related to children and young people based on where in the study they themselves were. They contributed, but I found that I did not feel that they had much to contribute.” (2019)

“Some students said that during the supervision, they experienced little progress in their work, because they could not remember the case that they had the year before.” (2021/22)

“I was left with the impression that the conversation in the groups and the experience between them was just as important as the task.” (2021/22)

Others commented that IPL during the first curriculum year was too early because the students did not yet understand their own role. One supervisor wrote:

“But I spoke to the students from the second and third year, and they were very clear that they themselves felt that they had so little to contribute when they took their first year. They did not “own” their profession well enough after a maximum of 6 months in the study, and thus the subject-professional discussions became a bit flat. This year, they themselves believed that they had much more weight and benefited greatly from the discussions.” (2020/21)

Some suggested that supervisors should be present during the whole group process, whereas others made the students more responsible for their own learning and group process:

“As they got into the topic, many better understood why they had worked a lot with group contracts and roles. Some were very prepared on the first day, while others had not done the work there. It could create some “management students,” but day 2 was good because many understood better how important it is to read and listen to the lectures, read articles on Canvas and be more prepared for day 2.” (2020/21)

3.3.5. The Supervisor Role

Several supervisors reflected upon the pandemic and secondary consequences for the students, such as reduced learning outcome and isolation due to the prolonged pandemic measures.

Some supervisors reflected on the development of their own professional development. Others found it challenging to intervene in groups without knowing how far in the process the groups were. Some expressed that the time allocated for supervision was too limited. The following comments made regarding the blended learning delivery mode illustrate the variation in responses:

“To hectic to call what I did together with the students supervision.” (2018/19)

“Possibly, supervision during the seminar days is sufficient. It might motivate the students to utilize the time they spend together in the group better.” (2018/19)

Regarding the online delivery mode, some supervisors indicated that they felt they should not intrude in groups in which the students were highly engaged. Logging into a breakout room was perceived as more abrupt than knocking on a door before entering a physical meeting room on campus. One supervisor wrote:

“Although my entrance into the group disturbed the group process, I felt we had good conversations about the process, the content and IPL.” (2021/22)

Some statements also expressed the need for a different pedagogical approach in online supervision. They expressed that online supervisors need to develop a new competence which includes the ability to create trust and relationship online. They highlighted that this is a forward-looking and relevant approach to supervision because professional students will work with users who will need their help. One supervisor wrote:

“Important that the students experience online supervision—this can be a part of their professional situation.” (2020/21)

A few supervisors felt that the pandemic offered the opportunity to rethink supervision, as illustrated by this quote:

“It is a special situation that helps develop the supervisor role.” (2021/22)

4. Discussion

The major finding of this study is that the supervisors supported the IPL intervention, regardless of delivery mode. The different perspectives revolved around different delivery modes and curricular content, online skills, their own role as supervisors, and the fact that the student groups required little supervision. The learning experience may have tremendous transfer value to welfare services because the same issues as highlighted by the supervisors may also appear in IPC, such as different knowledge bases and IPL/IPC preparedness. The cohorts of students that these supervisors supervised are the first cohorts of students to be supervised online. Thus, the supervisors' perspectives were captured during a historical event in higher education in which the use of technology was accelerated. Based on our results, we perceived that IPL supervision is challenging, regardless of the delivery mode. From this, we deduce that online supervision is relevant for the future and less complicated than IPL supervision.

In what follows, we have structured the discussion of our data according to the Bjerkholt [50] four principles regarding content and dialogues in supervision.

4.1. *The Relationship between Supervisors and Students*

The supervisors highlighted some structural challenges to synchronous supervision, such as supervising many groups during a limited time, which led to some groups being visited early in their process, whereas others were late in their group process. They also described well-known challenges, regardless of delivery mode, such as random group composition with unfamiliar peers, unprepared students, and the high number of study programs in the IPL groups. Indirectly and directly, they highlighted that these students might not have been adequately trained in group processes or those involving persons they did not previously know. In addition, the supervisors only had limited time with each IPL group. Such aspects correspond to the first principle regarding content and dialogues in supervision [50], namely on the relationship between the supervisors and the students. A dilemma appeared in the material; they wanted to supervise; however, the IPL project aims to prepare candidates to be practice-ready and independent. Educators are expected to facilitate social interaction and the group process, but these students are trained on skills necessary to enter working life as professionals.

We may not exclude the fact that the students turned on their cameras and were more active when the supervisors logged into the breakout rooms [53]. Both non-verbal and verbal communication is altered in online learning, which was also found in the supervisors' responses. Lack of generic skills among the students [54,62] may be harmful, because group dynamics is fundamental for learning outcomes in group work [63]. According to Edwards [35], inactive students would reduce each student's development and ability to recognize and negotiate the resources of other students to adjust themselves in joint action to solve the tasks assigned to the group. Lack of individual student preparation ahead of IPL according to the flipped classroom model [25], may counterbalanced by more close academical collaboration with the individual study programs [27,55,57]. Our study does not clarify the role of the individual study programs, but our results indicate a clear challenge for IPL supervisors if different groups of students from the same curricular year are not equally prepared with regard to generic skills.

4.2. *The Supervisors and Students Need to Establish a Common Goal*

It is interesting that some supervisors indicated that the groups seemed to work well without supervision, and the supervisors questioned whether they were needed. This finding is in accordance with the pre-pandemic study by Prasolova-Førland et al.,

highlighting the reduced need for IPL supervision among final year students, and that interaction with students mainly was restricted to technical issues [13].

Some supervisors indicated that they interrupted the online group work when they logged into the breakout rooms. One explanation may be that the student groups were instructed to work independently in student-led groups, according to a fixed time schedule [25]. Although the supervisors had agreed to 45 min of synchronous supervision per IPL group, the responses to the open questions revealed that some of them thought that this allotted time was not sufficient. Thus, the second principle regarding content and dialogues in supervision suggested by Bjerkholt [50], is challenged in the present data. Clarification of expectations to create a shared vision and agreement up front about what is to be done may be beneficial, as also suggested by Kvilhaugsvik et al. [5].

A qualitative pre-pandemic study on in-person IPL supervision found that supervisors have a wide range of views about IPL, in terms of its potential to enhance collaborative practice and care, and its role in helping students to achieve outcomes linked to IPL [64]. We may not exclude the fact that some supervisors were change resistant to pedagogical change and online transformation [65], because online learning may not be thought of as an educational environment that provides teachers and students with tools for interaction that allow promoting more meaningful learning [12]. Further, the changed role in the student active learning environment, from a traditional educator's role to being a supporter and facilitator of collective learning processes in students' active learning, must not be underestimated [12], regardless of delivery mode. Against this background, our study supports the study Lindquist et al. [64]; however, there is a knowledge gap concerning online pedagogy [65,66], particularly concerning the role of supervisors in student active online learning approaches.

4.3. The Mentees and the Mentors View the Mentoring Sessions as Covering Important Issues

Although some supervisors emphasized that meeting face-to-face was necessary to obtain a high learning outcome and claimed that this how it is done and will be done in working life, others acknowledged that many meetings in students' future working life take place digitally. Interestingly, regardless of delivery mode, the majority of supervisors reported that the students had a high learning outcome, as reflected in the responses to the closed questions.

Although they were supportive of the curriculum approach, they also indicated that the students did not remember the case from last year, that it was too much information, and not relevant to all professions. Ideally, information about the case could be disclosed gradually so that the content of the case develops over time [32]. Several made suggestions for improvements to both the design of the delivery, and to the content in the case. As described previously [28,29], students in the teacher and child welfare education programs had a knowledge base different from those in health and social programs. If the case was too complex, the academic level too high or too low for some students, or students did not remember the case from last year, we assume the consequence may be a reduced relational engagement and motivation for IPL/IPC [35]. Supervision of all students in IPL may be challenged by an imbalanced group composition with respect to study programs, different IPL preparedness [27,30] and lack of individual preparation ahead of IPL [26]. Therefore, what is perceived as "important issues" [50] may differ among students attending different study programs.

As highlighted by Jevne et al. [32], a case should be multi-layered so that the students can examine problems from a variety of perspectives. In contrast to uniprofessional case-based supervision, IPL supervisors must deal with professional differences, such as terminologies and syllabuses [57]. Our study suggests that the proposed advantage of spiral learning—'topics can be introduced in a manner to build up complexity, to enable better understanding'—may not be easy implement in complex IPL settings [41].

4.4. The Topics Are Reflected upon from Various Perspectives, Where the Teacher's Values, Skills, and Knowledge Play an Important Part

Previously, we found that the teacher and child welfare students in general seemed to have a stronger sense of their own future professional role [27,30]. Moreover, learning from each other was a category that occurred in all professions, but some students from teaching education tended to associate IPL with their own profession [57]. If the IPL curriculum and individual study program curriculum were intertwined, students may perceive competing agendas between disciplinary and IPL activities, which usually take precedence, focusing predominantly on their own profession [67]. This would, in theory, be opposed to, building strong forms of collaborative agency in professional decision-making while working on unpredictable problems, as also suggested by Edwards [35]. What was perceived as easy and difficult to master was probably not the same for students in different study programs, nor for the supervisors.

It has been suggested that students' understanding of how the spiral curriculum works over the years may be enhanced over time [68,69]. If students were inactive for various reasons and did not compare, discuss, or consider their different knowledge bases and methods [32], the intention of the IPL would not be met. One interesting aspect was highlighted by the quote that the students 'could be challenged on how to use supervision, which is important in their professional lives.' If knowledge transfer related to supervision more, in general, was less important for the students than completing seminar days as quickly as possible, we have not succeeded.

Some of these supervisors suggested that synchronous IPL teamwork could in itself be a low-threshold activity for joint spiral learning on common topics due to the unequal knowledge bases and preparedness for complex IPL of the student groups. Instead of an ambitious curriculum, simply working on case scenarios relevant to the most well-known challenges and misunderstandings in IPC teams was suggested as a better approach. The major aim of pre-service IPL is to equip students with relevant working-life skills [1,4,34,70]. Although our data support that IPL supervision is complex [64], the learning experience has tremendous transfer value to welfare services because we assume that the same issues will appear in IPC.

4.5. The Online Supervisor's Role

Based on our results, IPL supervision is challenging, regardless of the delivery mode. Our findings suggest that online supervision is less complicated than IPL supervision. Overall, the supervisors were supportive of breakout rooms as a suitable pre-service learning tool, but they also seemed to have a slightly higher preference for in-person education on campus.

Across academic years, the majority agreed that the online supervisor role is different from the traditional supervisor role. This is in line with a systematic literature review of 30 studies by Grammens et al., which suggested 5 teacher roles associated with synchronous online teaching: the instructional, managerial, technical, communicational, and social role [71]. Although that study does not target supervisors, or interprofessional online supervision, their findings are relevant to the present study. The suggested instructional role also refers to the mastery of basic pedagogical competences in online mode [71].

Kudryashova et al. [72] discussed the roles of the teacher to facilitate active learning in light of Bloom's taxonomy and the 5E Instructional model. Even though supervision was not included in their study their teacher's roles can be extrapolated to the supervision's role in our context. They found that the leader, motivator and trainer roles enhanced active learning the most. Thus, stimulating the supervisors to strengthen these roles might be a fruitful approach to increase the effect of the supervision in our courses. For the 2023 run of the IPL courses several structural changes for the supervision have been made, such as a fixed schedule for supervision for each student group, scheduled time for the student group to prepare themselves for supervision and a set of questions and topics the supervisors

to use in supervision, reflecting the roles a supervisor can fill to facilitate active learning the most.

Passive learning occurred in higher education in the first phases of the pandemic, when educators shared their screens and held monologues' lectures online [65,73]. This IPL project focused on active student learning, regardless of delivery mode. An interesting finding in our study is that in 2020/21, the majority responded that they had relevant online skills, whereas in 2021/22, around one-third responded that they did not have such skills. Interestingly, this may suggest a shift toward a changed view of the online supervisor role, even among skilled supervisors. However, we suggest that resistance against student active learning methods due to a more reclined supervisor role may be more pronounced than resistance against the online delivery mode [12].

Even though the sample sizes of the different academic year cohorts were small, a shift regarding the responses for verbal and non-verbal communication was found when IPL delivery was transformed to online mode, which lends cred to our data. Grammens et al. [71] suggested a communicational role for online teachers. The platform for both verbal and non-verbal communication is changed in online learning, such as students with 'black screens' and muted/unmuted students. This is indeed relevant for supervisors, who are expected to interact actively with students individually or in smaller groups.

Sherbersky et al. [11] provided a summary paper with practical tips, and a summary of online opportunities and challenges for live supervision targeting families in mental health care. Their suggested online skills required for systemic practice going forward in mental health care [11], are similar to the findings in our studies. They highlighted that online live supervision is an intense experience and emphasized the need for supervisors to pace themselves. This intensity seems to come from the extra layers of complexity and working hard to stay attuned to the group process, which is not as easy to perceive online [11].

Some supervisors expressed that IPL discussions in breakout rooms are less efficient than in-person group work, which is also highlighted by Cavinto et al. [74]. Few students prepared themselves before the seminars, regardless of delivery mode. We may have overestimated students' initial levels of online skills and overestimated their active participation in all online education [54]. Clearly, a low participation rate in online education will lead to extra challenges for online supervisors.

Feedback and guidance have, for several years, been among the areas in a national student survey where students are least satisfied [75]. Only 35 percent in this national student survey agreed that supervision online worked as a good alternative to regular supervision. Our data suggest that supervisors need to learn online generic skills, in order to supervise their students online [62,76]. When we look at Bjerkholt's 4 principles for successful guidance [50], as well as Eriksen and Gradovski [51], who point out asymmetry and trust, we understand that this is something that must lie at the bottom of competences, regardless of time and space.

Some supervisors expressed a dilemma with respect to the online social learning environment. These students had pre-service training targeting an online working life and must be able to communicate and collaborate with unfamiliar persons online. Thus, as suggested by Herrera [12], online educators may have to move toward a more reclined and passive facilitator role. According to the Norwegian government [77], the use of video consultations can help users feel safer and more in control when meeting with service representatives [77]. This is something we currently have little experience, knowledge and expertise about, and research is lacking [76]. INTERACT is a project which targets vulnerable children and young people, such as children who find it difficult to get out of the "boys and girls room". This means that we are dealing with a form of new guidance that can help develop relationships, safety, and trust online, which may be particularly import for children with challenging childhood experiences.

4.6. Strengths and Limitations

The strengths and limitations of this repeated cross-sectional study have been outlined in detail previously [25–31,53–55]. To overcome limitations due to selection bias, self-reported data, and the design, we used data from consecutive years, which is a “pseudo-longitudinal” design [33]. As we wanted to perform repeated measurements among both supervisors and students [55], the indicator questions were held stable due to the repeated cross-sectional design. The responses concerning child-related topics and IPL/IPC were stable over time. No validated recording questionnaire was available in Norwegian, but the research group had a relevant experience so that they could develop the design and the questions. The consistent patterns over time lend credibility to our study. A shift regarding the responses for verbal and non-verbal communication was found when IPL delivery was transformed to online mode, which lends cred to our data. There was no time lag between exposure and questions, which reduced the risk of recall bias, which may be of particular importance during unpredictable situations such as the pandemic.

In addition to the repeated cross-sectional design, the different educational backgrounds of the supervisors, and the anonymous data collection method are major strengths. The response rates among the supervisors were satisfactory. We did not perform an inter-rater reliability measure, because some of the questions were leading (not neutral), because they followed up on the closed questions. Although the IPL course did undergo improvements and revisions along the way, the learning outcomes of the course remained unchanged from 2019 to 2022, regardless of delivery mode. Although minor changes concerning the supervisors’ tasks occurred 2018–2022, it is still justified to make the present comparisons, since the basic questions and method of data collection were not changed. Due to the low sample size, and these changes, we did not perform advanced statistics. Instead, the similar distribution of responses across academic study years lends credibility to our results.

A number of individual-, group-, and peer-to-peer uniprofessional approaches for both synchronically and asynchronously supervision are used on the individual study programs, rooted in variables such as professional culture, tradition and identity. Most of the individual study programs were transformed into RET after the pandemic outbreak, whereas INTERACT is a well-planned online delivery, with only 45 min of IPL supervision/group. Future studies should explore both synchronous and asynchronous IPL supervisor more in detail, both targeting supervision of individuals and IPL groups. Although not tested in this study, virtuality offers potential in the asynchronous, such as the on-writing interaction, which may have relevance in contexts of professional supervision. The Community of Inquiry (CoI) framework is suggested to provide lens through which supervision of asynchronous IPL group discussions can be explored [78]. Moreover, what group dynamics are deployed to address the case-based scenarios, how positive interdependence is promoted, how individual accountability processes are proposed, and what is the supervisor’s role in all these aspects, remains to be investigated.

Although the organization of this study had its weaknesses, the described situation represented working life relevance: all professionals meet for the first time, and their collaboration time is often limited.

5. Conclusions

The supervisors in this study supported the IPL intervention, regardless of delivery mode. They suggested improvements and simplifications, mainly because bringing so many study programs together in IPL raised a complex learning situation. Their perspectives revolved around different delivery modes, online skills, and challenges concerning students’ different preparedness and knowledge base. They indicated that the student groups required little supervision, but also that this was due to the stringent time schedule outlined in the LMS, and the expectation that the IPL groups would work independently. Based on our results, we can conclude online supervision is not only less complicated than IPL supervision, but also relevant for students’ future work life. Our results indicate that online

supervisors need competence that includes the ability to create trust and relationships online. It is fundamentally important that the students experience online supervision because this will be part of their own future professional situation when working with vulnerable users and their next of kin, future colleges (students), and others. Supervisors in higher education are role models for their students, also in online settings.

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