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Article

Structured Comparison Approach in Remote Interprofessional Education: Enhancing Role Clarity and Collaborative Identity Through Video-Based Reflection

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Abstract: Remote interprofessional education (IPE) often fails to reflect cognitive differences across disciplines, limiting students' ability to form collaborative identities and clarify professional roles. Prior research has focused on attitudinal change, with less attention to reflective and epistemological learning. **Objective:** This study aimed to examine whether making profession-specific reasoning patterns visible through structured comparison and guided reflection in a brief, remote IPE intervention could enhance students' understanding of disciplinary perspectives and their interprofessional competence. **Methods:** Final-year Japanese university students in OT and MHSW participated in a two-session remote IPE intervention. In the first session, students independently assessed a video case using the International Classification of Functioning, Disability and Health (ICF) core sets. In the second, profession-specific results were aggregated, visualized and shared as feedback to prompt guided reflection. A convergent mixed-methods design was used, combining pre/post surveys using the Readiness for Interprofessional Learning Scale (RIPLS) and the Interdisciplinary Education Perception Scale (IEPS) with qualitative analysis of written reflections. **Results:** Significant improvement was observed in the IEPS Competence and Autonomy subscale among MHSW students with low baseline scores. No significant changes were found in RIPLS scores. Thematic analysis indicated increased awareness of disciplinary perspectives and recognition of complementary roles. **Conclusions:** A structured comparison approach can promote role clarity, reflective learning, and interprofessional identity in brief, remote IPE settings.

Keywords: interprofessional education; reflective practice; video-based learning; professional identity

1. Introduction

Interprofessional education (IPE) has recently gained widespread recognition as a critical strategy for fostering collaboration among professionals in healthcare, social welfare, and rehabilitation fields [1,2]. Enhancing the mutual understanding of distinct professional roles is increasingly viewed as essential for delivering person-centered care and advancing integrated community-based service delivery systems [3,4]. Although traditional IPE programs have historically relied on face-to-face workshops and clinical placement, the COVID-19 pandemic has significantly accelerated the adoption of remote and digitally mediated learning formats [5].

These online approaches have expanded access to interprofessional learning opportunities across geographically dispersed institutions. However, concerns remain regarding their capacity to

foster meaningful interactions, cognitive engagement, and sustained reflection among learners from diverse professional backgrounds [6]. In particular, questions have been raised regarding whether remote delivery formats can effectively support the development of core educational outcomes, such as professional identity, interprofessional competence, and collaborative readiness. Consequently, evaluating the educational effectiveness of remote IPE, particularly in brief and low-intensity formats, is an urgent priority in health and social care education [7].

Although several studies have demonstrated the potential of remote IPE [7], they have largely focused on generalized attitudinal changes rather than on deeper forms of reflective or epistemological learning. Although some initial research has explored how students from different professional backgrounds interpret shared client cases [8], this remains an underexplored area, particularly in the context of structured frameworks like the International Classification of Functioning, Disability and Health (ICF).

Occupational therapy (OT) students often prioritize functional impairments and recovery-oriented goals [9,10], whereas mental health social work (MHSW) students typically emphasize systemic influences and contextual support [6,7]. Making these divergent lenses visible and discussing them may provide fertile ground for identity clarification and mutual understanding; however, whether brief remote formats can facilitate these processes remains unclear [11,12].

In addition, widely used outcome measures in IPE research, such as the Readiness for Interprofessional Learning Scale (RIPLS) [13] and Interdisciplinary Education Perception Scale (IEPS) [14], have shown inconsistent responsiveness to brief and digitally delivered interventions [15]. As the demand for scalable and resource-efficient IPE models continues to grow, examining how these instruments capture learning shifts across various professional groups, particularly when interventions target the cognitive and identity-related dimensions of interprofessional development, is increasingly important.

Across many health education systems, including Japan, health and social care programs, such as OT and MHSW, are often located in separate academic units or on different campuses. This structural separation limits opportunities for meaningful interprofessional engagement during prelicensure training and reinforces disciplinary silos that can persist in clinical practice.

These silos can hinder effective collaboration in real-world healthcare settings, where interdisciplinary teamwork is essential for providing holistic, patient-centered care. By enhancing interprofessional role clarity and mutual understanding at the undergraduate level, educational interventions may contribute to more cohesive and collaborative clinical practice in the long term.

According to the Centre for the Advancement of Interprofessional Education (CAIPE), interprofessional education occurs “when two or more professions learn with, from, and about each other to improve collaboration and the quality of care.” [16] While the present intervention was conducted within uniprofessional class settings, it was designed to facilitate this principle indirectly by exposing students to the contrasting perspectives of other professions through structured feedback and guided reflection. In doing so, it aimed to foster understanding, reciprocal learning, and collaborative identity formation, even in the absence of direct interprofessional interaction.

This approach is original in that it combines profession-specific ICF-based assessment, comparative visualization, and structured reflection to facilitate epistemological learning without requiring synchronous interaction.

Therefore, this study developed a brief, two-session, remote IPE intervention designed to reveal disciplinary contrasts through structured comparison and guided reflection.

This study aimed to examine whether making profession-specific reasoning patterns visible through structured comparison and guided reflection in a brief, remote IPE intervention could enhance students’ understanding of disciplinary perspectives and their interprofessional competence.

2. Materials and Methods

2.1. Study Context

This study was conducted at a large Japanese university offering separate training programs for OT and MHSW students on different campuses. The OT curriculum focused on enhancing functional abilities through therapeutic activities, whereas the MHSW curriculum emphasized social support systems and mental health policies. The geographical separation of the campuses fostered divergent educational cultures that informed the professional perspectives explored in this study.

This university was selected as the study site because it represents a typical configuration of health professional education in Japan, where programs are often siloed by discipline. This structural separation mirrors broader national patterns, making it an appropriate context for investigating interventions that aim to bridge disciplinary divides and promote interprofessional understanding.

2.2. Research Design

This study adopted a convergent mixed-methods design, integrating quantitative and qualitative approaches, to investigate the impact of the IPE intervention. A quasi-experimental repeated-measures design was employed for the quantitative component, whereas a qualitative content analysis was applied to examine the open-ended reflections. Data from both strands were collected concurrently and interpreted in combination to provide a comprehensive understanding of the participants' learning experiences and changes in professional perspectives.

2.3. Participants

The participants were fourth-year undergraduate students enrolled in either the OT or MHSW programs during the 2022, 2023, and 2024 academic years. We recruited a total of 184 students, comprising 111 OT and 73 MHSW students. The inclusion criteria for both groups were: being in the final year of study, currently enrolled in coursework related to mental health, and having completed at least five days of clinical training in psychiatric hospitals or mental health welfare facilities.

Participants were excluded if they did not meet these conditions, had previously participated in similar IPE interventions, or declined to provide written informed consent. No participants were excluded for reasons other than these criteria.

After excluding individuals who declined to participate, the final sample included 109 OT and 71 MHSW students. This study was approved by the Ethics Committee of Nihon Fukushi University (Approval No. 22-056-02). All participants provided written informed consent before participating in the study.

2.4. Intervention

The IPE intervention was delivered over two remote class sessions. In the first session, the participants viewed a publicly available video produced by the Disability Welfare Division of Toyota City Hall that depicted an individual with schizophrenia living independently in the community [17]. The video was viewed synchronously by each cohort during scheduled class sessions, but at different times depending on the course schedule. OT and MHSW students did not attend a joint session; instead, they participated as intact class groups within their respective programs. Standardized materials and prompts were used across both cohorts to ensure procedural consistency.

Permission was obtained to use the video for educational purposes. Following this viewing, the students assessed the individual using the ICF Core Sets for schizophrenia.

In the second session, the assessment outcomes were grouped by professional field and used to generate feedback for structured comparison. Specifically, aggregate scores from the ICF Core Set assessments were visually summarized using comparative bar charts that highlighted key differences in rating patterns between OT and MHSW students. These visualizations were accompanied by brief

narrative summaries prepared by instructors that outlined the contrasting tendencies and potential interpretive gaps.

During the second session, each cohort (OT and MHSW) engaged in in-class group discussions facilitated by course instructors. These discussions occurred within each professional group and did not involve interprofessional interaction. Students reflected collectively on the comparison results and structured prompts in a classroom setting. No breakout rooms or joint online sessions were conducted. Qualitative data were derived from individual written reflections submitted after these discussions.

To prompt deep engagement, the instructors provided structured reflection prompts (e.g., “What might account for these differences?” and “How do these perspectives complement each other?”) to guide individual and group discussions.

In addition to these examples, students were prompted with questions such as “What does this comparison tell you about your own professional assumptions?” and “How might these differences affect teamwork in practice?” These prompts were categorized into three thematic areas: (1) interpretation of clinical information, (2) professional assumptions and values, and (3) implications for collaboration. This thematic structuring aimed to deepen students’ reflection and facilitate the integration of disciplinary perspectives. These thematic categories were developed through iterative discussions among faculty members from OT and MHSW departments, based on prior experience in interprofessional teaching and relevant theoretical frameworks, including the ICF model and transformative learning theory. The categories were intended to reflect key dimensions where disciplinary perspectives often diverge, thereby facilitating focused reflection on interprofessional role understanding.

This format aimed to provide visible and interpretable professional contrasts for learners.

The feedback sessions were facilitated by trained faculty members from both the OT and MHSW departments. To ensure consistency, the facilitators used a shared discussion guide that included common prompts and timing structures. Each session was conducted independently by the respective course instructors; however, standardized materials were used, and a calibration meeting was conducted prior to the intervention, which helped maintain comparable facilitation across groups. Facilitators were instructed to balance clarification with open-ended questioning, allowing students to explore role boundaries and disciplinary values without privileging one interpretation over another.

2.5. Instruments and Quantitative Measures

To assess changes in students’ attitudes toward interprofessional collaboration, two validated self-report instruments, RIPLS and IEPS, were used. The Japanese version of the RIPLS was validated by Tamura et al. [13]. It comprises 19 items rated on a five-point Likert scale. The RIPLS was administered across all three cohorts (2022, 2023, and 2024). The IEPS is an 18-item instrument developed by Luecht et al. [14], with responses rated on a six-point Likert scale. The IEPS was administered in 2023 and 2024 to capture the nuanced aspects of interprofessional role understanding and perceived competence. Furthermore, data on demographic variables were collected, including the year of participation, participants’ academic program affiliation (OT or MHSW), age, and gender.

The selection of RIPLS and IEPS was based on their widespread use in IPE research and their complementary focus on attitudinal readiness (RIPLS) and perceived competence and autonomy (IEPS). RIPLS has been culturally adapted and validated for use in Japan [13]. The Japanese version of the IEPS has also been evaluated for its content validity, construct validity, and internal consistency in a study by Itakura et al. [18], which confirmed its acceptable psychometric properties among Japanese health professional students. While formal reproducibility testing of the Japanese IEPS has been limited, the study provided foundational support for its use. In the present study, we applied the Japanese version of the IEPS with caution, acknowledging its psychometric limitations and monitoring reliability indicators, which are reported in the Results section.

The RIPLS was administered to fourth-year students in all three cohorts (2022, 2023, and 2024) to enable comparison of baseline attitudes across years. The IEPS was added to the study protocol in 2023 following consultation among the research team, and was therefore not used with the 2022 cohort.

2.5.1. Quantitative Data Analysis

Quantitative data were analyzed using repeated-measures analysis of variance (RM-ANOVA) to evaluate group (OT vs. MHSW) × time (pre- vs. post-intervention) interaction effects, and no significant baseline differences were found.

Prior to these analyses, the data were tested for normality using the Shapiro–Wilk test. The assumptions for parametric tests, including normality and homogeneity of variance, were confirmed, supporting the use of ANCOVA and RM-ANOVA.

When baseline differences were present, analysis of covariance (ANCOVA) was employed, with pre-intervention scores entered as covariates. Significant interaction effects were further examined using post-hoc paired sample t-tests. Statistical significance was set at $p < .05$, and partial eta squared (η^2) was reported as a measure of effect size.

To further explore how baseline interprofessional attitudes influenced the effect of the video intervention, the participants were divided into three groups according to their pre-intervention scores on the Competence and Autonomy subscale of the IEPS.

These tertiles (low, middle, and high) were derived by ranking all participants’ baseline scores and splitting them into approximately equal thirds.

In cases with identical scores near the cutoff, the participants were grouped to minimize within-group variability and maintain balanced group sizes.

2.5.2. Qualitative Data Collection and Analysis

Qualitative data were collected through individual written reflections submitted by students via an online form after the second session. Reflections were obtained from all participants ($n = 180$), and all responses were included in the qualitative analysis. These reflections were based on structured prompts comparing the professional groups’ ICF-based assessments.

The data were analyzed using thematic analysis following an inductive approach. Two researchers independently reviewed the responses, manually coded the data, and collaboratively refined themes through iterative discussion. Discrepancies were resolved by consensus to ensure credibility and consistency.

To enhance interpretive depth, the analysis was informed by transformative learning theory [19] and experiential learning theory [20]. Particular attention was paid to instances of disorienting dilemmas, critical reflection, and evolving awareness of professional identity, as these concepts offered explanatory insight into the observed changes in interprofessional competence.

The qualitative findings were analyzed independently and interpreted in relation to the quantitative outcomes to facilitate integrated inferences, especially regarding the perceived gains among MHSW students.

3. Results

3.1. Participant Characteristics

A total of 180 students participated in the study, including 109 occupational therapy (OT) students and 71 mental health social work (MHSW) students. The gender distribution was 64 males (35.6%) and 116 females (64.4%). The average age was 22.6 years ($SD = 0.8$), with OT students having a mean age of 22.5 ($SD = 0.7$) and MHSW students a mean age of 22.8 ($SD = 0.9$).

Table 1 presents the detailed participant characteristics.

RIPLS was administered across all three cohorts (2022–2024), whereas IEPS was administered only in 2023 and 2024.

Table 1. Participant Characteristics.

Measure	OT Studenrs (n=109)	MHSW Students (n =71)	Total Participants (n =180)
Gender, n (%)			
Male	35(32.1%)	29(40.8 %)	64(35.6%)
Female	74 (67.9%)	42(59.2%)	116(64.4%)
Age, M(SD)	22.5(0.7)	22.8(0.9)	22.6 (0.8)

Note. RIPLS was completed by all 180 participants across 2022–2024. IEPS was administered only in 2023 and 2024 cohorts.

3.2. Statistical Analysis Results

The Shapiro–Wilk test indicated that the majority of the variables met the assumption of normality ($p > .05$), supporting the use of parametric analyses. For variables with minor deviations, visual inspection and skewness/kurtosis values were within acceptable ranges.

To evaluate the impact of the IPE program, we used a two-way repeated measures analysis of variance (RM-ANOVA) and analysis of covariance (ANCOVA). This approach allowed for appropriate statistical control of baseline differences.

Model selection criteria

RM-ANOVA was used to examine subscale scores for which no significant baseline differences were observed between the OT and MHSW groups. ANCOVA was used to analyze subscale scores exhibiting significant baseline differences, which were used as covariates. This ensured an accurate estimation of post-intervention effects while accounting for initial group disparities.

3.2.1. RIPLS Results

Independent sample t-tests were conducted to determine whether baseline differences existed between OT and MHSW students across the RIPLS subscales. Significant differences were observed in scores on the Teamwork and Collaboration($t[152.1] = 2.38, p = .019$) and Professional Identity subscales ($t[160.8] = -2.94, p = .004$), indicating the need for baseline adjustment via ANCOVA for these scores. No significant baseline differences were observed in scores on the Opportunities for Interprofessional Learning subscale or total scores (both $p > .05$); therefore, RM-ANOVA was used for these scores.

The ANCOVA results revealed no significant group effect on the Professional Identity subscale scores after controlling for baseline scores ($F[1,176] = 0.66, p = .416, \eta^2 = .004$). The covariate (pre-intervention score) was a significant predictor of post-intervention outcomes ($F[1,176] = 22.69, p < .001, \eta^2 = .114$). The interaction between group and baseline scores was not significant ($F[1,176] = 0.55, p = .459, \eta^2 = .003$).

Similarly, the ANCOVA results showed no significant group effect on the Teamwork and Collaboration subscale scores ($F[1,176] = 0.00, p = .992, \eta^2 = .000$) and no significant interaction effect between group and baseline scores ($F[1,176] = 0.004, p = .948, \eta^2 = .000$). The covariate remained a significant predictor ($F[1,176] = 50.59, p < .001, \eta^2 = .223$).

No significant main or interaction effects were observed for the other RIPLS subscales (Opportunities for Interprofessional Learning and total score) analyzed using RM-ANOVA (all $p > .05$).

3.2.2. IEPs Results

The ANCOVA results revealed a significant group effect on the Competence and Autonomy subscale scores after controlling for baseline scores ($F[1, 117] = 4.52, p = .036, \eta^2 = .037$). This corresponded to a small-to-medium effect size according to Cohen's classification, suggesting a modest but meaningful difference in perceived competence and autonomy between OT and MHSW students. The covariate was also significant ($F[1, 117] = 15.17, p < .001, \eta^2 = .115$), indicating that pre-intervention scores predicted post-intervention outcomes. Furthermore, a significant interaction was found between group and baseline scores ($F[1, 117] = 4.26, p = .041, \eta^2 = .035$), suggesting that the relationship between pre- and post-intervention scores differed by group.

The RM-ANOVA results indicated a significant main effect of time on the Understanding Others' Value subscale scores ($F[1, 119] = 14.12, p < .001, \eta^2 = .106$), suggesting improvement across both groups. No significant group or interaction effects were observed.

No significant effects were found on the Perceived Need for Cooperation and Perception of Actual Cooperation subscale scores (all $p > .05$).

To clarify differences in the effects of the intervention based on the participants' initial attitudes, the participants were divided into three tertiles based on their pre-intervention IEPS scores, and the results were further examined. The tertiles were determined based on participants' baseline scores on the Competence and Autonomy subscale.

Figure 1 illustrates the mean changes in IEPS scores after the intervention by profession and tertile. MHSW students in the low tertile showed the greatest improvement ($\Delta = +4.1$), whereas OT students in the high tertile showed a slight decline ($\Delta = -1.3$). These findings were consistent with the significant interaction observed in the ANCOVA results, suggesting that the intervention was particularly effective for MHSW students with initially low perceived interprofessional competence and autonomy. Table 2 presents the statistical outcomes for each RIPLS and IEPS subscale, including the type of analysis used (RM-ANOVA or ANCOVA), significance of group and interaction effects, and covariate effects, where applicable.

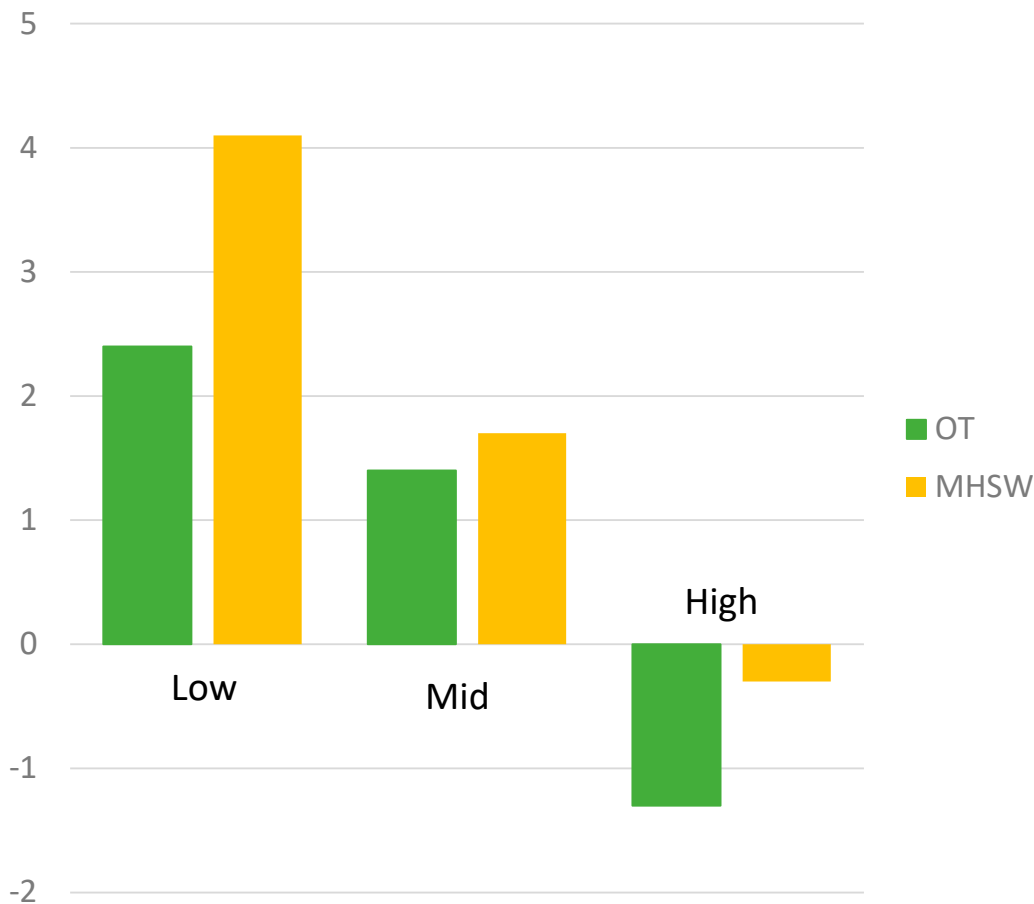


Figure 1. Changes in IEPS scores after the intervention by pre-intervention tertile and profession. Note. OT, occupational therapy; MHSW, mental health social work.

Table 2. Statistical results for the RIPLS and IEPS subscales.

Scale	Subscale	Analysis	Group Effect	Covariate Effect	Interaction Effect
RIPLS	Professional Identity	ANCOVA	F(1,176) = 0.66, p = .42, η^2 = 0.004	F(1,176) = 22.69, p < .001, η^2 = 0.114	F(1,176) = 0.55, p = .46, η^2 = 0.003
	Teamwork and Collaboration	ANCOVA	F(1,176) = 0.00, p = .99, η^2 = .000	F(1,176) = 50.59, p < .001, η^2 = .223	F(1,176) = 0.004, p = .95, η^2 = .000
	Opportunities for Interprofessional Learning	RM-ANOVA	ns	—	ns
	Total Score	RM-ANOVA	ns	—	ns

IEPS	Competence and Autonomy	ANCOVA	F(1,117) = 4.52, p = .036, η^2 = 0.037	F(1,117) = 15.17, p < .01, η^2 = 0.115	F(1,117) = 4.26, p = .04, η^2 = 0.035
	Understanding Others' Value	RM-ANOVA	F(1,119) = 14.12, p < .001, η^2 = 0.106	—	ns
	Perceived Need for Cooperation	RM-ANOVA	ns	—	ns
	Perception of Actual Cooperation	RM-ANOVA	ns	—	ns

Note. “ns” indicates non-significant results (p > .05). Partial eta squared (η^2) is reported as a measure of effect size.

3.3. Qualitative Findings

The three qualitative themes described in this section—(1) challenging assumptions and experiencing tension, (2) recognizing professional gaps and knowledge asymmetry, and (3) emerging sense of complementarity and team contribution—correspond closely to the initial thematic framework introduced during the intervention design. Specifically, they align with the three analytic focus areas: interpretation of clinical information, professional assumptions and values, and implications for collaboration. These themes were developed inductively through thematic analysis of students’ written reflections. Two researchers independently coded the data and collaboratively refined the themes through iterative discussion to ensure consistency and credibility.

3.3.1. Challenging Assumptions and Experiencing Tension

Several OT students who scored higher on the pre-intervention competence scales expressed surprise or discomfort when exposed to MHSW students’ interpretations that emphasized environmental strengths over functional limitations.

“I couldn’t understand why they rated impairment so low. It made me question how we define severity.” (OT student 1, post-intervention)

“Their viewpoint was more optimistic, and I wasn’t sure if that was realistic.” (OT student 2, post-intervention)

This tension reflected Mezirow’s concept of disorienting dilemmas, which are experiences that challenge a person’s assumptions and prompt transformative learning [17].

which could catalyze professional re-examination and growth. For MHSW students, encountering clinical- and function-oriented ratings appeared to validate their complementary roles, reinforcing their interprofessional autonomy.

3.3.2. Recognizing Professional Gaps and Knowledge Asymmetry

Students from both groups reflected on disciplinary blind spots, often noting their lack of exposure to the other’s knowledge base.

“I didn’t know much about social resources, so I probably saw things more positively than I should have.” (OT student 3, post-intervention)

“We (MHSW students) tend to overlook body functions because we rarely assess them directly.” (MHSW student 2, post-intervention)

These insights helped explain the reason that MHSW students 3, whose pre-intervention scores were lower than those of OT students 4, showed more significant improvements in perceived

competence than OT students 5; exposure to OT students perspectives allowed them to recognize their limitations and growth potential.

3.3.3. Emerging Sense of Complementarity and Team Contribution

Both groups began to articulate a team-based identity, recognizing that differences in interpretation reflected complementary professional contributions.

“OT students identify deficits; MHSW students bring in support. Together, we cover more ground.” (MHSW student 3, post-intervention)

“This helped me see what I can offer to the team.” (OT student 6, post-intervention)

This aligned with the observed improvement in the Competence and Autonomy subscale scores, as students internalized both their role and the relevance of other professions within the collaborative context.

4. Discussion

This study demonstrates that a brief, remote IPE intervention using structured, profession-specific comparisons can enhance students' self-perceived interprofessional competence. Specifically, improvements in the IEPS Competence and Autonomy subscale were observed, particularly among MHSW students with lower baseline scores. These gains suggest that exposing students to contrasting disciplinary perspectives in a structured format may promote role clarification and professional self-awareness.

In contrast, no significant changes were found in RIPLS scores, including subscales related to teamwork, professional identity, and collaborative attitudes. This divergence implies that short-term interventions may effectively stimulate cognitive shifts related to competence but may not sufficiently influence affective or relational dimensions of interprofessional learning. Moreover, RIPLS may lack the sensitivity to detect nuanced developments in reflective thinking or role awareness over limited durations [21].

These findings suggest that contextually grounded, discipline-specific comparisons can function as cognitive catalysts for students, particularly those with less established professional identity. The intervention's structure—including ICF-based assessment, profession-specific feedback, and guided prompts—appears to have supported learners in understanding their own roles and those of others. This aligns with previous findings emphasizing the importance of tailored IPE formats in promoting interprofessional self-efficacy [22].

Qualitative data added depth to the quantitative findings by illustrating how students cognitively processed disciplinary differences. Many OT students expressed discomfort or confusion when encountering perspectives that diverged from their clinical assumptions, consistent with Mezirow's concept of disorienting dilemmas [19,21–23].

Some students subsequently reframed their understanding of their own role and expressed appreciation for the complementary strengths of other professions. These accounts contextualize the observed improvements in perceived competence, particularly among MHSW students, who may have gained confidence through affirmation of their systemic perspective when contrasted with the functionally oriented perspectives of OT students [24–26].

The alignment between quantitative improvements and qualitative narratives highlights the value of a mixed-methods approach. It not only confirms the intervention's impact on measurable constructs like self-perceived competence but also reveals the internal meaning-making processes central to professional identity development.

These findings suggest that even brief, low-intensity IPE interventions can foster meaningful cognitive engagement when designed to highlight disciplinary contrasts. Incorporating profession-specific perspectives and structured feedback may help learners clarify their roles and recognize the value of collaboration. Tailoring content to disciplinary backgrounds and making interprofessional differences visible—rather than minimizing them—can be an effective pedagogical strategy for stimulating reflection and fostering collaborative awareness.

Future interventions may benefit from including behavioral assessments, such as simulated tasks or structured team activities, to capture applied competence not reflected in self-reports. Longitudinal follow-up could also assess whether cognitive changes persist and translate into collaborative behaviors in practice.

While this study was conducted in Japan, where professional programs often operate in siloed academic structures, the core components—publicly available media, structured comparisons, and standardized frameworks like the ICF—are adaptable to other settings facing similar challenges. This approach may offer a scalable model for interprofessional learning in resource-constrained or logistically fragmented contexts.

This study's findings should be interpreted with caution due to limitations including its single-institution scope, focus on final-year students, and reliance on written reflections. Although efficient, written responses may lack the depth of dialogic methods. Future research may incorporate interviews or focus groups to enrich qualitative insight and strengthen triangulation. Additionally, the intervention did not include direct interprofessional interaction between OT and MHSW students, as each cohort engaged separately within their own programs. While the design included structured comparisons and guided reflection to approximate interprofessional learning, this format limited adherence to the foundational IPE principle that “two or more professions learn with, from, and about each other.” Future iterations should consider integrating opportunities for direct interprofessional dialogue to enhance relational and collaborative learning.

5. Conclusions

This study demonstrated that a brief, low-resource IPE intervention using structured, profession-specific comparisons and video-based reflection fostered measurable cognitive development, particularly in the domain of professional competence. Quantitative analysis showed significant gains in the IEPs Competence and Autonomy subscale, especially among MHSW students with lower baseline self-efficacy, suggesting that exposure to disciplinary contrasts supported role clarification and self-assessed team contribution.

Qualitative findings reinforced this pattern by revealing that students experienced dissonance, reframed their understanding, and increasingly appreciated the complementary roles of other professions. These data-driven insights support the conclusion that structured cognitive engagement, even in the absence of face-to-face interaction, can advance interprofessional understanding.

Although many IPE studies emphasize high-intensity or in-person formats, our findings indicate that carefully designed remote interventions can target core cognitive dimensions of interprofessional learning. This supports prior research highlighting the importance of structured educational design in professional identity development [11,12].

This study adds originality by illustrating a scalable approach that combines reflective learning, standardized assessment (ICF), and comparative analysis to facilitate epistemological growth in a digital learning environment.

As educational institutions continue to adopt hybrid and online modalities, this approach offers a practical framework for delivering interprofessional education in structurally siloed or resource-constrained contexts, without compromising learning depth or identity development.

Reference

1. Spaulding EM, Marvel FA, Jacob E, et al. Interprofessional education and collaboration among healthcare students and professionals: a systematic review and call for action. *J. Interprof. Care*. 2021;35(4):612–621. doi:10.1080/13561820.2019.1697214.
2. Ojelabi AO, Ling J, Roberts D, et al. Does interprofessional education support integration of care services? A systematic review. *J. Interprof. Educ. Pract.* 2022;28:100534. doi:10.1016/j.xjep.2022.100534.

3. Ge L, Yip WF, Yan AHH, et al. Perceived roles and barriers in delivering community-based care: a qualitative study of health and social care professionals. *Int. J. Integr. Care.* 2023;23(4):5. doi:10.5334/ijic.7617.
4. Chown G, Mader S, Eisenhauer R, et al. Interprofessional education: using live simulation to enhance collaboration and communication. *Health Interprof. Pract.* 2015;2(3). doi:10.7710/2159-1253.1089.
5. Sy MP, Park V, Nagraj S, et al. Emergency remote teaching for interprofessional education during COVID-19: student experiences. *Br. J. Midwif.* 2022;30(1):47–55. doi:10.12968/bjom.2022.30.1.47.
6. Yorke AM, Hoelscher DC, Stalburg CM, et al. Interprofessional education faculty development survey: perspectives on IPE and collaborative practice and COVID-19. *J. Interprof. Educ. Pract.* 2022;29:100529. doi:10.1016/j.xjep.2022.100529.
7. Power A, Park V, Owens M, et al. Academics' experiences of online interprofessional education in response to COVID-19. *Br. J. Midwif.* 2022;30(4):222–228. doi:10.12968/bjom.2022.30.4.222.
8. Allan CM, Campbell WN, Guptill CA, et al. A conceptual model for interprofessional education: the International Classification of Functioning, Disability and Health (ICF). *J. Interprof. Care.* 2006;20(3):235–245. doi:10.1080/13561820600718139.
9. Pettersson I, Pettersson V, Frisk M. ICF from an occupational therapy perspective in adult care: an integrative literature review. *Scand. J. Occup. Ther.* 2012;19(3):260–273. doi:10.3109/11038128.2011.557087.
10. Maritz R, Baptiste S, Darzins SW, et al. Linking occupational therapy models and assessments to the ICF to enable standardized documentation of functioning. *Can. J. Occup. Ther.* 2018;85(4):330–341. doi:10.1177/0008417418797146.
11. Robben S, Perry M, van Nieuwenhuijzen L, et al. Impact of interprofessional education on collaboration attitudes, skills, and behavior among primary care professionals. *J. Contin. Educ. Health Prof.* 2012;32(3):196–204. doi:10.1002/chp.21145.
12. Christian LW, Hassan Z, Shure A, et al. Evaluating attitudes toward interprofessional collaboration and education among health professional learners. *Med. Sci. Educ.* 2020;30(1):467–478. doi:10.1007/s40670-020-00931-2.
13. Tamura Y, Seki K, Usami M, et al. Cultural adaptation and validating a Japanese version of the Readiness for Interprofessional Learning Scale [RIPLS]. *J Interprof Care.* 2012;26(1):56–63. doi:10.3109/13561820.2011.595848.
14. Luecht RM, Madsen MK, Taugher MP, et al. Assessing professional perceptions: design and validation of an interdisciplinary education perception scale. *J. Allied Health.* 1990;19(2):181–191.
15. Lieberman-Betz RG, Brown JA, Wiegand SD, et al. Building collaborative capacity in early intervention preservice providers through interprofessional education. *Lang. Speech Hear. Serv. Sch.* 2023;54(2):504–517. doi:10.1044/2022_LSHSS-22-00110.
16. Centre for the Advancement of Interprofessional Education (CAIPE). (2002). Defining IPE. London: CAIPE. Retrieved from <https://www.caipe.org>
17. Toyota City Official Channel. (2017, November 30). Same but different: Understanding symptoms and daily life of people with mental disabilities [Video]. YouTube. <https://www.youtube.com/watch?v=5dZSiVL9MmM>
18. Itakura, M., & Sugimoto, N. (2012). Development of a Japanese version of the Interdisciplinary Education Perception Scale (IEPS). *Journal of Health, Medical and Welfare Interprofessional Collaboration: Education and Practice*, 5, 93–100.
19. Mezirow J. Transformative learning: theory to practice. *New Dir. Adult Contin. Educ.* 1997;1997(74):5–12. doi:10.1002/ace.7401.
20. Fewster-Thuente L, Batteson TJ. Kolb's experiential learning theory as a theoretical underpinning for interprofessional education. *J. Allied Health.* 2018;47(1):3–8.
21. Crumb L, Larkin R, Johnson M, et al. An interprofessional internship model for training master's level social work and counseling students in higher education settings. *J. Hum. Behav. Soc. Environ.* 2018;28(8):1091–1096. doi:10.1080/10911359.2018.1470952.

22. Peterson E, Keehn MT, Hasnain M, et al. Exploring differences in and factors influencing self-efficacy for competence in interprofessional collaborative practice among health professions students. *J. Interprof. Care.* 2024;38(1):104–112. doi:10.1080/13561820.2023.2241504
23. Park V, McLarnon N, Hutchings M, et al. Interprofessional education after the pandemic: lessons learned and future considerations. *Br. J. Midwif.* 2023;31(9):519–529. doi:10.12968/bjom.2023.31.9.519.
24. Christie M, Carey MD, Robertson A, et al. Putting transformative learning theory into practice. *Aust. J. Adult Learn.* 2015;55(1):9–30.
25. Bonifas RP, Gray AK. Preparing social work students for interprofessional practice in geriatric health care: insights from two approaches. *Educ. Gerontol.* 2013;39(7):476–490. doi:10.1080/03601277.2012.701137.
26. Domaç S, Anderson L, O'Reilly M, et al. Assessing interprofessional competence using a prospective reflective portfolio. *J. Interprof. Care.* 2015;29(3):179–187. doi:10.3109/13561820.2014.983593.

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