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Development and content validation of a hybrid interprofessional course for first-year health professions students

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Abstract

Objectives: To develop a 15-week hybrid interprofessional education course for first-year health professions students and conduct faculty-rated content validation of eight provisional competency domains.

Methods: A curriculum development study based on the analysis, design, development, implementation, and evaluation model was conducted. Development included literature review, semi-structured interviews with seven faculty from six fields, formative usability review, and implementation across five sections (197 initially registered; 189 completed). For content validation, faculty involved in or expected to contribute to course delivery were purposively recruited. Twenty-three faculty rated eight competencies on alignment, necessity, first-year appropriateness, and teaching and assessment feasibility. Data were summarized using means, standard deviations, and item-level content validity indices; open-ended responses were categorized. No inferential tests were conducted.

Results: The framework comprised eight domains: communication, teamwork and collaboration, role clarification, values, ethics and respect for life, patient safety and risk anticipation, emotional labor and emotion regulation, conflict management, and trust restoration and feedback. Mean ratings were highest for necessity (M = 4.70, SD = 0.36) and alignment (M = 4.59, SD = 0.47), and lower for feasibility (M = 4.05, SD = 0.76) and first-year appropriateness (M = 3.73, SD = 0.75). Corresponding mean content validity indices were .97, .92, .71, and .53. Faculty comments emphasized level adjustment, role clarification, staged sequencing, and concrete cases.

Conclusions: The findings show the need to consider learning level, sequencing, and instructional application when introducing interprofessional competencies early in health professions education. Future studies should examine learner experiences, competency development, and applicability across institutions.

Keywords: Interprofessional education, curriculum development, content validation, hybrid learning, first-year health professions students

Introduction

The core of interprofessional education (IPE) lies in helping learners understand the roles and perspectives of other professions, work on shared problems, and develop communication and collaborative practices through interaction. IPE is not achieved simply by placing students from different programs in the same classroom. Learning activities need to be designed so that students can bring the knowledge and perspectives of their own fields into the classroom, interpret problems together, and experience the communication and teamwork required for collaboration. In this sense, IPE has been emphasized as an important educational strategy for preparing health professions students for collaborative practice.[1]

Implementing IPE within a formal curriculum, however, remains difficult. Studies involving entry-level students have suggested that team-based learning can support

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communication and teamwork, but meaningful interprofessional exchange requires activities that draw on the knowledge and contributions of each profession.[2] Asynchronous online IPE modules may be useful for introducing foundational concepts such as role clarification, conflict resolution, and interprofessional communication, whereas team functioning and shared problem solving are more fully addressed when such learning is connected to synchronous discussion or face-to-face interaction.[3] Curriculum-level IPE cases have also emphasized the need to balance educational design with practical feasibility and to develop activity structures that both faculty and students can understand and carry out.[4] Systematic and scoping reviews have similarly shown that IPE implementation is shaped by contextual and process factors, including faculty development, institutional support, curriculum organization, and implementation conditions.[5,6] IPE therefore needs to move beyond stand-alone programs and brief shared activities and be organized as part of a sustainable undergraduate curriculum.

This issue also matters in Korean health professions education. Although the need for IPE has been increasingly recognized in Korea, it has not yet been fully established within regular health professions curricula. Previous Korean studies have examined students' perceptions of IPE, interschool collaboration, short-term program outcomes, and the development of IPE-related evaluation tools.[7-12] These studies have contributed to understanding the need for and implementation of IPE in the Korean context. Many of them, however, have focused on selected combinations of professions, short-term programs, effectiveness testing, or perception surveys. Less attention has been given to the development of a semester-long, multi-section IPE course embedded in the regular curriculum, especially one designed primarily for first-year students from multiple health-related fields.

IPE at the first-year level has a distinct educational role. Students at the beginning of their programs cannot be expected to demonstrate advanced clinical performance or complex interprofessional decision-making. However, early exposure to other professions and their roles, together with opportunities to learn with students from different professional backgrounds, can provide a foundation for understanding collaboration in later professional coursework and clinical practice. First-year IPE can therefore serve as introductory education that brings role understanding, communication, collaboration, and team-based learning into the beginning of professional education, rather than postponing interprofessional learning until students enter clinical settings. This perspective is consistent with Lee and colleagues' finding that readiness for interprofessional learning differs across health-related student groups and should be considered when integrating IPE into health professions curricula.[13]

Against this background, this study developed Interprofessional Collaborative Leadership in Health Care, a regular IPE course designed primarily for first-year health professions students. The course brought together students from multiple health-related departments and was implemented across five sections within the regular undergraduate curriculum. Its design combined a shared course structure with team-based learning in mixed-profession groups.

The course used a hybrid format centered on face-to-face team-based activities and supported by flipped-learning videos in selected weeks. Flipped-learning materials introduced key concepts, while face-to-face sessions focused on case analysis, team discussion, role play, dialogue reconstruction, risk anticipation, debriefing, reflection, and team portfolio presentations. This design separated preparatory concept learning from activities that required synchronous interaction and feedback. The ADDIE model was used to organize the course-development process from analysis through evaluation.[14]

Defining the competency framework was also a central part of course development. The Interprofessional Education Collaborative (IPEC) Core Competencies for Interprofessional Collaborative Practice provided an international reference for communication, teamwork, roles and responsibilities, and values and ethics.[15] In Korea, IPE evaluation tools have also been developed and validated.[16] However, applying broad IPE competency domains to a regular course for first-year students requires attention to learner readiness, instructional level, and what can realistically be taught and assessed. Therefore, this study aimed to develop a hybrid interprofessional course designed primarily for first-year health professions students using the ADDIE model and to conduct faculty-rated content validation of eight provisional competency domains derived through the course-development and implementation process.

Methods

Study design

This curriculum development study used the analysis, design, development, implementation, and evaluation (ADDIE) model to develop a regular hybrid IPE course for first-year health professions students and included faculty-rated content validation of a provisional eight-competency framework.

The study proceeded in two stages. First, the course Interprofessional Collaborative Leadership in Health Care was developed and implemented through the ADDIE phases.[14] Second, 23 faculty members rated the provisional competencies and provided open-ended feedback after the first semester of course implementation.

Course context and curriculum development

The course examined in this study was Interprofessional Collaborative Leadership in Health Care, offered as a regular undergraduate course at Wonkwang University in Korea. Wonkwang University offers nine medical and health professions degree programs, including medicine, dentistry, Korean medicine, pharmacy, and nursing. The course was designed primarily for first-year health professions students

and operated on a Pass/Fail basis. It used a hybrid format combining flipped-learning videos with face-to-face team-based activities.

In the analysis phase, a literature review was supplemented by semi-structured interviews with seven faculty members representing six health-related fields: medicine, nursing, emergency medical services, dentistry, Korean medicine, and medical counseling. Interviews explored proposed course topics, teaching and learning methods, assessment approaches, alignment with discipline-specific accreditation standards, course organization, section composition, faculty roles, and the learning environment. Interview responses were organized by topic and used to identify common educational and operational needs, including respect for life and ethical decision-making, patient safety, communication and role understanding, interactive case- and team-based learning, mixed-profession grouping, and participation-focused assessment.

In the design phase, these findings were used to develop preliminary 15-week course plans. A formative usability review then examined weekly flow, learning objectives, online and face-to-face components, assessment methods, student participation, faculty workload, and implementation feasibility. The review meeting included 25 participants from relevant university units and health professions programs, including four medical student representatives who entered the program between 2021 and 2023. A total of 20 health professions faculty members and student representatives completed a five-point Likert-scale questionnaire with open-ended questions. Student input was used as formative feedback on course design and feasibility.

In the development phase, feedback from the usability review informed refinement of the course structure and instructional materials. Particular attention was given to the scope of pre-class learning, clarity of assessment criteria and rubrics, team roles and participation, mixed-profession grouping, and consistency across sections. Flipped-learning videos, worksheets, case and scenario materials, role cards, risk-anticipation activities, debriefing questions, reflection worksheets, feedback forms, and assessment rubrics were developed to connect preparatory learning with face-to-face team activities.

In the implementation phase, the course was delivered across five sections in the second semester of 2025 using common instructional materials and operating guidelines. A total of 197 students initially registered, 194 remained enrolled at the end of the semester, and 189 completed the course. Each section was co-taught during the same class sessions by two faculty members from different professional backgrounds. Faculty preparation meetings and workshops were used to share the course structure, assessment procedures, facilitator roles, and common operating standards.

In the evaluation phase, faculty operation reviews, feedback meetings, and a faculty development workshop were used to identify areas for further refinement. These included the connection between flipped learning and face-to-face activities, worksheet and activity difficulty, variation in learner backgrounds, profession-specific cases, and coordination among section instructors. Following course completion, implementation materials and faculty feedback were reviewed during development of the provisional competency framework, and findings from the faculty content-validation survey were subsequently considered in revising the course plan for the following semester.

Development of the core competencies

The competency framework was developed iteratively across course development and implementation. The IPEC framework, literature review, faculty needs assessment, and preliminary course design provided the initial conceptual basis.15 Communication, Teamwork and Collaboration, Role Clarification, Values, Ethics, and Respect for Life, and Patient Safety and Risk Anticipation were first identified because they were consistently reflected in the intended course objectives and learning activities.

Following course implementation, the competency structure was reviewed against the syllabus, flipped-learning content, worksheets, case and activity materials, and faculty feedback. Emotional Labor and Emotion Regulation, Conflict Management, and Trust Restoration and Feedback were added as distinct domains because these areas recurred in the implemented course but were not fully represented by the initial five domains. The first author synthesized the development materials and drafted the provisional eight-competency framework and definitions, which were reviewed by the second author and revised where necessary following discussion. The framework was then subjected to faculty-rated content validation.

Faculty panel and sampling

For the subsequent content-validation phase, faculty members involved in or expected to contribute to course delivery were purposively recruited. This approach provided multiple professional and disciplinary perspectives relevant to course delivery.

Twenty-three faculty members participated, representing medicine, dentistry, Korean medicine, nursing, pharmacy, emergency medical services, occupational therapy, medical education, basic medical sciences, education/counseling, and philosophy/religious studies. All 23 completed the survey and were included in the analysis.

Survey instrument

Content validation was defined as the process of obtaining faculty judgments on whether the proposed competency domains adequately represented the educational content and purposes of the course. The self-administered survey consisted of background information, ratings of the eight provisional competencies, and three open-ended questions.

The background information section asked about participants' academic field or profession, prior participation in IPE-related courses or programs, types of IPE experience, and likelihood of participating as faculty in future IPE-related courses or programs. Types of IPE experience were treated as a multiple-response item and included experience as an instructor or facilitator, planning or operating an IPE course or program, participation in IPE-related faculty development workshops, and IPE-related research.

Each competency was evaluated on four criteria: alignment with the course objectives, necessity for health professions students, appropriateness for first-year students, and feasibility of teaching and assessment within a university course. Each criterion was rated on a five-point Likert scale (1 = strongly disagree to 5 = strongly agree), resulting in 32 quantitative items.

The three open-ended questions asked which competencies required revision or refinement and why, whether additional competencies should be considered, and what challenges or support needs were anticipated for implementation and scaling.

Data collection and analysis

The faculty survey was administered after course completion on December 19, 2025. Questionnaires were distributed to all 23 panel members, and all were returned and included in the analysis.

Faculty characteristics were summarized using frequencies and percentages. Academic field, prior IPE experience, and likelihood of future participation were treated as single-response items, whereas types of prior IPE experience were analyzed as multiple-response items. Quantitative ratings were summarized using means, standard deviations, and item-level content validity indices (I-CVIs). Responses of 4 or 5 were counted as meeting the corresponding content-validation criterion. For each of the 32 rating items, the I-CVI was calculated by dividing the number of ratings of 4 or 5 by the total number of panel members (N = 23). An I-CVI of .78 or higher was considered acceptable.17,18 No inferential statistical tests were conducted.

Open-ended responses were analyzed separately for each question. The first author read the responses repeatedly, divided responses containing multiple ideas into meaning units, assigned initial codes, and grouped related codes into categories. The second author reviewed the categories against the original responses and the organization of the coded data. The categories were revised where necessary following this review. Responses such as "none" or "no opinion" were recorded but were not coded into substantive categories. The study was determined to be exempt from review by the Institutional Review Board of Wonkwang University Hospital. Participation was voluntary. Participants received information about the study purpose and procedures, anonymity, and their right to decline or withdraw from participation before submitting the survey.

Results

Final course structure and operation

The final course, Interprofessional Collaborative Leadership in Health Care, was a 15-week regular hybrid IPE course designed primarily for first-year health professions students. It combined flipped-learning preparation with face-to-face team-based activities and addressed respect for life, ethical judgment, patient safety, role understanding, communication, teamwork and collaboration, emotional labor, conflict, and trust.

The course progressed from foundational reflection and professional role understanding to case-based application and integrative reflection. Early weeks addressed respect for life and professional roles; middle weeks focused on ethical judgment, patient safety, role clarification, interprofessional communication, teamwork, and conflict; later weeks addressed emotional labor, trust, shared responsibility, and integrative reflection (Table 1).

Face-to-face sessions used case analysis, discussion, role-based activities, dialogue reconstruction, problem solving, feedback, and reflection. Each section was co-taught by two faculty members from different professional backgrounds during the same class sessions.

Common teaching and learning materials included flipped-learning videos, worksheets, case and scenario materials, role cards, risk-anticipation worksheets, reflection forms, feedback forms, and rubrics, which were shared across the five sections.

A total of 197 students initially registered, 194 remained enrolled at the end of the semester, and 189 completed the course.

Provisional competency framework

The course-development and implementation process yielded eight provisional competency domains: Communication, Teamwork and Collaboration, Role Clarification, Values, Ethics, and Respect for Life, Patient Safety and Risk Anticipation, Emotional Labor and Emotion Regulation, Conflict Management, and Trust Restoration and Feedback. The definitions and representative educational content and learning methods are presented in Table 2.

General characteristics of the faculty panel

The faculty panel consisted of 23 members. Medicine and dentistry were the most common fields (n = 4 each, 17.4%), followed by Korean medicine (n = 3, 13.0%). Nursing, pharmacy, emergency medical services, and philosophy and religious studies were represented by two faculty members each (8.7%), and occupational therapy, medical education, basic medical sciences/anatomy, and education/counseling by one each (4.3%).

Fourteen faculty members (60.9%) reported prior IPE-related experience and nine (39.1%) reported none. Among the 14 with prior experience, 12 (85.7%) had participated as

Table 1. Weekly structure and instructional materials of the regular IPE course

Week	Main focus	Representative learning activities	Main teaching and learning materials
1	Course orientation and introduction to IPE	Introduction to course purpose, operation, Pass/Fail assessment criteria, and team-based activities	Syllabus; common course operation guide
2-3	Foundational reflection on respect for life and professional roles	Individual reflection, team discussion, exploration of health professional roles	Flipped-learning videos; reflection worksheets; worksheets
4-5	Ethical judgment and patient safety/risk anticipation	Analysis of ethical dilemma cases; identification of risk factors and sharing within teams	Case scenarios; risk anticipation worksheets; debriefing questions
6-8	Role clarification and interprofessional communication	Comparison of professional perspectives; role-card activities; analysis of communication failure cases; dialogue reconstruction	Role cards; scenario cards; dialogue reconstruction worksheet
9-11	Teamwork/collaboration and conflict management	Team-based case solving; coordination of differences; consensus-building activities; team reflection	Team activity worksheet; conflict scenario; feedback form
12-13	Emotional labor/emotion regulation and trust restoration/feedback	Self-care reflection; explanation, apology, and feedback dialogue practice; discussion of trust restoration cases	Reflection worksheet; dialogue scenario; debriefing questions
14-15	Integrative reflection and team portfolio presentations	Team portfolio preparation; presentations; peer feedback; final reflection	Team portfolio template; presentation rubric; final reflection sheet

Note. IPE = interprofessional education. The table summarizes the 2025 second-semester course structure.

Table 2. Definitions and representative educational content and learning methods for the eight provisional competencies

Code	Core competency	Definition	Representative educational content and learning methods
C	Communication	The ability to convey one's ideas and information clearly and in understandable language in interprofessional health care collaboration; to listen to others' opinions and provide appropriate feedback. This includes adjusting messages so that meaning can be shared among members with different professions and levels of expertise.	Content: Communication failure; interprofessional dialogue; feedback Methods: Case analysis; dialogue reconstruction; team discussion; feedback practice
T	Teamwork and Collaboration	The ability to work with members of diverse health professions toward a shared goal, recognize interdependence within the team, and contribute to consensus building and problem solving.	Content: Shared goals; interdependence; collaborative problem solving Methods: Team-based case work; team portfolio; collaborative reflection
R	Role Clarification	The ability to understand one's own and other health professions' roles and responsibilities, recognize overlaps and differences among professions, and coordinate roles during collaboration.	Content: Professional roles and responsibilities; overlaps and differences; role coordination Methods: Role introduction; role-card activities; comparison of professional perspectives; role-coordination discussion
E	Values, Ethics, and Respect for Life	The ability to reflect on ethical dilemmas based on respect for life and professional ethics and to make responsible professional judgments and decisions.	Content: Respect for life; professional ethics; ethical decision-making Methods: Reflection; ethical dilemma cases; team discussion
S	Patient Safety and Risk Anticipation	The ability to identify risk factors that may occur in health care processes in advance and prevent errors and adverse events through team-based communication.	Content: Patient safety incidents; systems thinking; risk recognition Methods: Case-based learning; risk-identification activities; team discussion; debriefing
EMO	Emotional Labor and Emotion Regulation	The ability to recognize and regulate emotions and stress experienced in health care settings and to maintain professional roles through self-care and emotional coordination.	Content: Emotional labor; emotional burden; emotion regulation; self-care Methods: Self-reflection; stress and emotion recognition activities; team discussion
CON	Conflict Management	The ability to recognize differences in opinion and conflict during collaboration and resolve conflict through problem-focused dialogue and coordination.	Content: Professional disagreement; conflict recognition; coordination Methods: Conflict scenarios; role play; mediation dialogue; consensus-building activities
TRU	Trust Restoration and Feedback	The ability to restore relationships and sustain collaboration through explanation, apology, and feedback when trust has been damaged.	Content: Trust formation; communication failure; explanation; apology; feedback Methods: Dialogue practice; case discussion; peer feedback; reflection

Note. Competency definitions were those used in the faculty content-validation survey.

instructors or facilitators, five (35.7%) had participated in faculty development workshops, and one (7.1%) had experience in planning or operating an IPE course or program. None reported IPE-related research experience.

Regarding the likelihood of future participation as IPE faculty, the most frequent response was moderate (n = 8, 34.8%), followed by high (n = 7, 30.4%), very high (n = 6, 26.1%), and low (n = 2, 8.7%). No faculty member selected none. The general characteristics of the faculty panel are presented in Table 3.

Table 3. General characteristics of the faculty panel (N = 23)

Characteristic	Category	n (%)
Academic field	Medicine	4 (17.4)
	Dentistry	4 (17.4)
	Korean medicine	3 (13.0)
	Nursing	2 (8.7)
	Pharmacy	2 (8.7)
	Emergency medical services	2 (8.7)
	Philosophy and religious studies	2 (8.7)
	Occupational therapy	1 (4.3)
	Medical education	1 (4.3)
	Basic medical sciences/anatomy	1 (4.3)
	Education/counseling	1 (4.3)
Prior participation in IPE-related courses or programs	Yes	14 (60.9)
	No	9 (39.1)
Type of IPE experience	Instructor/facilitator in an IPE course or program	12 (85.7)
	Participation in IPE-related faculty development workshop	5 (35.7)
	Planning or operation of an IPE course or program	1 (7.1)
	IPE-related research	0 (0.0)
Likelihood of participating as faculty in future IPE-related courses or programs	Low	2 (8.7)
	Moderate	8 (34.8)
	High	7 (30.4)
	Very high	6 (26.1)

Note. IPE = interprofessional education. Types of IPE experience were multiple-response items calculated among the 14 faculty members who reported prior IPE-related experience.

Faculty-rated content validation of the provisional competencies

All 23 faculty ratings were included. Each competency was evaluated on alignment, necessity, first-year appropriateness, and teaching and assessment feasibility, and I-CVIs were calculated from ratings of 4 or 5.

Mean scores for all eight competencies were above 4.00. Values, Ethics, and Respect for Life received the highest mean score (M = 4.42, SD = 0.51), followed by Conflict Management (M = 4.34, SD = 0.66), Trust Restoration and Feedback (M = 4.32, SD = 0.64), Teamwork and Collaboration (M = 4.30, SD = 0.53), and Communication (M = 4.28, SD = 0.51). Emotional Labor and Emotion Regulation had a mean score of 4.23 (SD = 0.63), Role Clarification 4.18 (SD = 0.58), and Patient Safety and Risk Anticipation 4.08 (SD = 0.68) (Table 4). I-CVIs for necessity were .96 or higher for all competencies, and I-CVIs for alignment with the course objectives were .87 or higher. First-year appropriateness was lower, particularly for Patient Safety and Risk Anticipation (I-CVI = .35), Teamwork and Collaboration (I-CVI = .43), Role Clarification (I-CVI = .43), and Emotional Labor and Emotion Regulation (I-CVI = .48). For teaching and assessment feasibility, several competencies did not reach .78, including Patient Safety and Risk Anticipation (I-CVI = .61), Emotional Labor and Emotion Regulation (I-CVI = .65), Trust Restoration and Feedback (I-CVI = .65), Conflict Management (I-CVI = .70), and Communication and Role Clarification (I-CVI = .74) (Table 4).

Across the four criteria, necessity had the highest mean rating (M = 4.70, SD = 0.36), followed by alignment with the course objectives (M = 4.59, SD = 0.47), teaching and assessment feasibility (M = 4.05, SD = 0.76), and first-year appropriateness (M = 3.73, SD = 0.75). Mean I-CVIs showed the same pattern: .97, .92, .71, and .53, respectively (Table 4).

Analysis of faculty open-ended responses

Faculty open-ended responses were organized around three areas: suggestions for revising or refining the eight provisional competencies, additional competencies or areas to consider, and anticipated challenges or support needs for implementation. Across these areas, responses emphasized adjustment of difficulty for first-year students, stronger role clarification, gradual sequencing, concrete cases, clearer activity procedures, and operational support for multi-section delivery.

Regarding the definitions, scope, and composition of the eight competencies, the most frequently mentioned issue was the need to adjust difficulty for first-year students. Some faculty members noted that Values, Ethics, and Respect for Life; Patient Safety and Risk Anticipation; and Trust Restoration and Feedback could be challenging at this level. They recommended foundational concepts and cases adjusted to students' readiness, narrowing the scope of selected competencies, or introducing them gradually across the semester. Several faculty members emphasized the need for students to develop a basic understanding of their own and other professional roles before engaging in interprofessional collaboration and suggested strengthening introductory role-focused activities and opportunities for mutual understanding across professions.

Responses to the question about additional competencies focused more often on refining existing domains than on adding new independent competencies. Other comments addressed learner readiness, incorporation of perspectives from practice settings, teaching approaches appropriate for first-year students, and learning experiences that support a positive orientation toward one's own and other professions.

For implementation, faculty members emphasized staged sequencing and a stronger foundation in role understanding. Communication and Teamwork and Collaboration were viewed as suitable for earlier introduction when supported by

Table 4. Faculty content-validation ratings of the eight provisional competencies (N = 23)

Code	Core competency	M	SD	Alignment I-CVI	Necessity I-CVI	First-year appropriateness I-CVI	Teaching/assessment feasibility I-CVI
C	Communication	4.28	0.51	.91	1.00	.61	.74
T	Teamwork and Collaboration	4.30	0.53	1.00	.96	.43	.78
R	Role Clarification	4.18	0.58	.91	.96	.43	.74
E	Values, Ethics, and Respect for Life	4.42	0.51	.96	1.00	.57	.83
S	Patient Safety and Risk Anticipation	4.08	0.68	.91	.96	.35	.61
EMO	Emotional Labor and Emotion Regulation	4.23	0.63	.91	.96	.48	.65
CON	Conflict Management	4.34	0.66	.87	.96	.65	.70
TRU	Trust Restoration and Feedback	4.32	0.64	.87	.96	.70	.65
	M (*SD*) by evaluation criterion			4.59 (.47)	4.70 (.36)	3.73 (.75)	4.05 (.76)
	Mean I-CVI by evaluation criterion			.92	.97	.53	.71

Note. Ratings of 4 or 5 on the five-point Likert scale were counted as meeting the corresponding content-validation criterion. I-CVI = item-level content validity index.

accessible cases and scenarios, whereas Patient Safety and Risk Anticipation or Emotional Labor and Emotion Regulation were suggested for later or more gradual treatment. Faculty members also noted that interprofessional activities would be more meaningful if students first developed a basic understanding of different professional roles.

Practical support needs included adjusting the amount and structure of course content, establishing feedback systems for small-group activities, diversifying teaching methods, developing profession-specific cases and scenarios, accounting for differences in learner backgrounds, providing appropriate physical learning spaces, and maintaining student engagement. Faculty members particularly noted the value of classrooms with movable furniture, strategies to sustain participation, and a lighter course structure when content exceeded the available class time.

Subsequent course refinement

The faculty content-validation findings and open-ended feedback informed selected refinements to the course plan for the following semester. Role clarification was made more explicit early in the semester through activities introducing different professions and students' professional backgrounds. Patient safety was framed around foundational concepts and a systems perspective, emotional labor incorporated recognition of emotional burden and self-care, and trust-related content was developed through discussion of relationship changes following communication failure and trust formation in collaborative practice. The eight-domain framework was retained, while the subsequent course plan reflected adjustments in the level, sequencing, and instructional emphasis of selected competencies.

Discussion

Principal findings

This study developed and implemented a 15-week, multiprofessional hybrid IPE course designed primarily for first-year health professions students and conducted faculty-rated content validation of a provisional eight-competency framework. The course was delivered across five sections using flipped-learning materials and face-to-face team-based activities. Faculty ratings were consistently high for alignment with the course objectives and necessity, whereas first-year appropriateness and feasibility of teaching and assessment were lower and varied across competencies. These differences draw attention to the distinction between the educational relevance of a competency and how it can be introduced and assessed at an entry level.

Open-ended responses provided further direction for course refinement. Faculty emphasized adjustment of difficulty, stronger role clarification, gradual sequencing, and the use of concrete cases and clearer activity procedures. These findings informed selected refinements in the subsequent course iteration, including earlier attention to professional roles and more introductory treatment of selected competencies. The eight-domain framework was retained, while the level, sequencing, and instructional emphasis of some competencies were further refined for first-year learners.

These findings can be considered alongside previous studies of early-year and hybrid IPE. Lochner and colleagues examined team-based interprofessional learning among first-semester students in occupational therapy and orthoptics. Although questionnaire scores showed little change, qualitative findings suggested that team-based learning could

support communication and teamwork when learning activities required meaningful contributions from the participating professions.[2] The present course similarly introduced interprofessional learning early in students' education, but extended this approach across a 15-week regular course involving multiple health professions and structured activities focused on role understanding, communication, case analysis, and team interaction.

The hybrid structure also parallels findings from Grace and colleagues who reported that asynchronous IPE modules were useful for introducing concepts such as role clarification, conflict resolution, and interprofessional communication, while team functioning was more difficult to develop without synchronous interaction.[3] In the present course, flipped-learning materials were used primarily for preparatory concept learning, while face-to-face sessions were reserved for discussion, team activities, and reflection. This combination allowed asynchronous learning to support, rather than replace, direct interprofessional interaction.

At the curriculum level, Kvarnström and colleagues emphasized the importance of meaningful learning activities, experienced teachers, organizational support, and pragmatic conditions for sustaining interprofessional learning within health professions education.[4] Similar implementation issues emerged in the present course, particularly the need for shared teaching materials, faculty coordination, and consistent activity procedures across sections. The present study differs in scope, however, as it describes a semester-long course delivered across multiple sections rather than a longitudinal interprofessional curriculum spanning several programs.

Applicability of the competency framework for first-year learners

The lower ratings for first-year appropriateness and feasibility of teaching and assessment are important for interpreting the competency framework. Although faculty generally considered the competencies necessary and well aligned with the course objectives, several domains were viewed as more difficult to address at an introductory level. This pattern suggests that applying broad professional competencies to first-year IPE requires careful adjustment of learning depth, case complexity, and instructional expectations. Foundational concepts and structured learning activities may make context-dependent competencies more accessible to beginning learners.

This approach was reflected in the subsequent course iteration. Role clarification was made more explicit early in the semester through activities introducing different professions and students' professional backgrounds. Patient safety focused on basic concepts and a systems perspective, emotional labor was addressed through recognition of emotional burden and self-care, and trust-related content was situated within communication failure and collaborative relationships. These refinements provide one example of how complex interprofessional competencies can be introduced progressively at an entry level without requiring the depth of performance expected in later professional training.

An introductory IPE course such as the one described in this study can be positioned as an early stage in a longitudinal developmental sequence. Longitudinal IPE literature and accreditation guidance support repeated, meaningful, and developmentally appropriate interprofessional learning across the curriculum, with competencies revisited at increasing levels of complexity and authenticity.[19,20] A spiral approach can allow foundational role understanding, communication, and collaboration introduced early in training to be revisited later through more complex simulations and clinical contexts. This longitudinal perspective may also help explain why some competencies in the present study were considered necessary but difficult to address fully at the first-year level.

Implications for curriculum design and implementation

Several practical considerations emerged from the development and implementation of this course. For first-year IPE, the depth and complexity of competency-based learning should be adjusted to learner readiness, with foundational concepts and accessible cases introduced before more context-dependent professional situations. In a hybrid format, asynchronous materials can be used for preparatory learning, while face-to-face sessions can focus on activities that depend on interaction, including case discussion, role-based activities, team problem solving, feedback, and reflection.

Multi-section delivery also requires attention to consistency across instructors and learning groups. Common worksheets, case materials, assessment criteria, and facilitator guidance can provide a shared instructional structure, while faculty preparation meetings or workshops can help align expectations and activity procedures. An IPE course is not established simply by placing students from different professions in the same classroom; the learning design must create structured opportunities for them to understand roles, exchange perspectives, and work toward shared tasks. Where feasible, interprofessional grouping and small-group learning spaces can further support these interactions.

Co-teaching by faculty from different professional backgrounds was another feature of this course. Each section was taught jointly by two faculty members from different professional backgrounds. This arrangement created a structure for faculty collaboration in course delivery and may also have provided students with a visible example of communication, coordination, and shared responsibility across professional boundaries. When feasible, pairing instructors from different professional backgrounds may offer an additional way to embed interprofessional collaboration within the learning environment itself.

Limitations

This study has several limitations. First, the course was developed and implemented at a single university, and its applicability to other institutional or educational contexts

should be examined. Second, although the faculty panel represented a range of professional and disciplinary backgrounds, experience in IPE research and curriculum development was limited. Future content-validation work would benefit from involving faculty with broader IPE experience across multiple institutions. Third, student representatives contributed to the formative usability review but were not specifically sampled from the first-year target population, and the learning experiences and outcomes of students who completed the course were not evaluated in this study. Future research should examine learner experiences and competency development across subsequent course iterations and institutional settings.

Conclusions

This study developed and implemented a 15-week, multiprofessional hybrid IPE course as part of the regular undergraduate curriculum for first-year health professions students and conducted faculty-rated content validation of eight provisional competency domains. Faculty ratings were generally high for necessity and alignment with the course objectives, while first-year appropriateness and feasibility of teaching and assessment were lower for several competencies. These findings show the need to consider learning level, sequencing, and instructional application when broad interprofessional competencies are introduced early in health professions education. Further studies should examine learner experiences, competency development, and the applicability of the course across institutions and subsequent course iterations.

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Conflicts of Interest

The authors declare that they have no conflicts of interest.

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