

# Comparing case discussion and scenario-based roleplay for interprofessional education: a within-subject study in health sciences

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**Abstract.** Interprofessional Education (IPE) equips health students with essential competencies in teamwork, communication, and role understanding. At the Faculty of Health Sciences, Universitas 'Aisyiyah Yogyakarta, IPE has been implemented through case discussion during the odd semester and scenario-based roleplay in the even semester, yet direct comparisons of these approaches remain limited. This study aimed to compare their effectiveness in enhancing interprofessional collaboration. A quantitative comparative study with a one-group repeated measures design was conducted among 86 purposively selected students who had experienced both methods. Data were obtained using a questionnaire adapted from the Interprofessional Collaborative Competency Attainment Survey (ICCAS), encompassing values/ethics, roles/responsibilities, communication, and teamwork, and analyzed with the Wilcoxon Signed Rank Test. The mean score of case discussion was 4.35, while roleplay was 4.36 on a 5-point scale, with a p-value of 0.367 ( $>0.05$ ), indicating no significant difference, although roleplay showed a slightly higher descriptive score. The findings suggest that both methods effectively improve students' interprofessional collaboration, with case discussion fostering reflective analytical skills and roleplay providing interactive practice experiences. Integrating both approaches may therefore offer complementary benefits for strengthening IPE implementation in health professional education.

## 1 Introduction

Interprofessional Education (IPE) has become a critical component of health professions education, aiming to equip students with collaborative competencies that ensure quality and patient-centered care. Emphasizes IPE as an essential strategy to strengthen teamwork, communication, and shared decision-making among health professionals, thereby improving patient safety [1].

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At the Faculty of Health Sciences, Universitas 'Aisyiyah Yogyakarta, IPE is delivered through two primary methods: case discussions in odd semesters and scenario-based roleplay in even semesters. Case discussions provide a structured environment that encourages critical thinking and role clarification, whereas roleplay creates an interactive and authentic simulation of clinical practice [2], [3]. Despite their widespread application, limited comparative evidence exists regarding the effectiveness of these methods in strengthening interprofessional collaboration competencies.

The case study method allows students to analyze complex clinical scenarios through structured discussion, fostering critical reasoning and professional role clarification. Conversely, role play enables experiential engagement through active performance, reflection, and immediate feedback. Comparing these two methods is important to determine whether analytical or experiential learning provides greater impact on interprofessional collaboration. Previous research indicates that both methods enhance teamwork and communication [4], [5], yet evidence directly comparing them in similar cohorts remains limited.

Recent studies further highlight the advantages of roleplay [6]. For example, a recent study employing interprofessional acute-care simulation demonstrated improved interprofessional competencies, including teamwork and communication, among nursing and medical students [7]. Similarly, [8] demonstrated that integrating patient narratives within interprofessional role-play significantly enhanced students' empathy, communication skills, and understanding of collaborative care, emphasizing how narrative-driven experiential learning promotes deeper engagement and reflective practice. These findings underscore the experiential and reflective strengths of roleplay, suggesting that it may provide unique benefits compared to traditional discussion-based approaches.

Several other studies support the broader value of IPE. [9] showed that IPE significantly improves collaborative knowledge, skills, and attitudes, while [8] specifically demonstrated that role-play enriched with patient narratives enhances empathy and interprofessional communication. [3] reported that IPE supports role understanding and collaborative readiness by helping students clarify their professional responsibilities and expectations within interprofessional teams. [10] further demonstrated that roleplay-based simulation provides realistic, immersive experiences that strengthen teamwork, communication, and role clarity, key competencies in interprofessional collaboration. Likewise, [2] emphasized that simulation-based IPE positively influences teamwork and communication, and this is further supported by [11], which found that interprofessional simulation (IPE-simulation) programs significantly improve collaborative competencies including communication, teamwork, and interprofessional collaborative behavior compared to traditional single-profession simulation. However, [12] also noted that in resource-limited settings, single-profession simulation may be a viable alternative while still yielding substantial benefits.

Based on this evidence, the present study hypothesizes that scenario-based roleplay may provide slightly greater benefits than case discussion in enhancing interprofessional collaboration competencies, although both methods are expected to be effective. This hypothesis will be tested using a comparative quantitative design to determine whether differences between the two approaches are statistically significant. Therefore, the purpose of this study was to compare the effectiveness of case discussion and scenario-based roleplay methods in improving interprofessional collaboration competencies among health sciences students at Universitas 'Aisyiyah Yogyakarta.

## 2 Methods

This study employed a quantitative comparative design with a one-group repeated measures approach to compare students' interprofessional collaboration competencies after participating in two learning methods: case discussion and scenario-based roleplay.

The research was conducted at the Faculty of Health Sciences, Universitas 'Aisyiyah Yogyakarta, during the 2024/2025 academic year. The population included 608 undergraduate students enrolled in the Interprofessional Education (IPE) program. The sample size was determined using the Slovin formula with a 10% margin of error ( $n = N / [1 + N(e)^2]$ ), resulting in 86 participants who met the inclusion criteria. Purposive sampling was applied to select students who completed both learning sessions. Inclusion criteria were active student status and full participation, while exclusion criteria were absence or incomplete involvement in either activity.

The case discussion intervention used a problem-based approach, engaging students in small-group analysis of interprofessional patient cases to clarify roles and develop collaborative care plans. The roleplay intervention involved scenario-based simulations depicting teamwork in clinical settings, such as emergency and chronic care management. Each session lasted approximately 120 minutes and was conducted once per semester.

Data were collected using the Interprofessional Collaborative Competency Attainment Survey (ICCAS), which measures four domains communication, teamwork, roles and responsibilities, and ethics on a five-point Likert scale. The questionnaire was distributed immediately after each session, with a three-month interval between interventions.

Data were analyzed using descriptive statistics (mean and standard deviation) and the Wilcoxon Signed Rank Test, with significance set at  $p < 0.05$ . The study was approved by the Ethics Committee of Universitas 'Aisyiyah Yogyakarta (No. 4759/KEP-UNISA/VIII/2025).

## 3 Result and discussion

### 3.1 Result

This section presents the outcomes of the comparative analysis between case discussion and scenario-based roleplay in Interprofessional Education (IPE). The results are explained through descriptive statistics, tables, and graphical visualization to provide a clearer understanding of student performance across both learning methods. The subsequent discussion interprets these findings in light of existing literature and educational theory to highlight their implications for curriculum development.

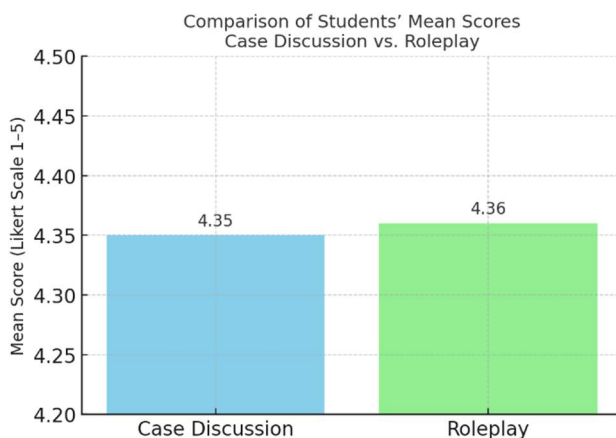
#### 3.1.1. Comparison of case discussion and roleplay

A total of 86 students participated in both case discussion and roleplay-based IPE activities. Descriptive analysis showed that the mean score for case discussion was 4.35 (SD = 0.28), while roleplay recorded a slightly higher mean of 4.36 (SD = 0.25). table:

**Table 1.** Comparison of students' mean scores between case discussion and roleplay

Learning Method	Mean Score	Standard Deviation
Case Discussion	4.35	0.28
Scenario-based Roleplay	4.36	0.25

The Wilcoxon Signed Rank Test revealed that the difference between case discussion and roleplay was not statistically significant ( $p = 0.367$ ).



**Figure 1.** Comparison of mean scores between case discussion and roleplay

As shown in Table 1 and illustrated in Figure 1, both methods produced high mean scores, indicating effective enhancement of interprofessional collaboration competencies. These results indicate that both methods are equally effective in fostering interprofessional collaboration competencies among students. Although roleplay had a marginally higher mean score, the difference was not large enough to suggest statistical superiority.

### 3.2 Discussion

The findings suggest that both methods effectively enhanced students' interprofessional collaboration competencies. Case discussion provides structured opportunities for theoretical reflection, role clarification, and critical thinking, while roleplay offers authentic and interactive experiences that simulate real clinical practice.

The outcomes are consistent with global evidence. [6] found that roleplay was more effective than video-based learning in enhancing teamwork [7], while [8] showed that roleplay combined with patient narratives successfully improved empathy, communication, and collaborative understanding among health profession students, reinforcing the value of experiential and narrative-based learning approaches [4]. Similarly, [10] highlighted that roleplay-based simulation strengthens communication, teamwork, and role clarity by enabling students to actively engage in realistic interprofessional scenarios.

Unlike several previous studies that found significant differences favoring roleplay [10], [6], this study revealed no statistically significant difference between the two approaches [7]. This finding suggests that contextual and instructional factors such as class structure, group dynamics, and facilitator engagement may influence learning outcomes. The result supports [12], who reported comparable effects between roleplay and simulation methods when designed effectively [6]. Therefore, this study contributes new evidence indicating that case discussions can be as beneficial as roleplay when structured with collaborative learning principles.

However, the absence of significant statistical differences in this study suggests that the two methods may be complementary rather than competing. This aligns with [12], who

argued that roleplay and simulation-based activities yield comparable results depending on instructional design [6]. It also echoes [2], who emphasized the importance of integrating both reflective and experiential learning in IPE to maximize outcomes [11]. Overall, these findings support the recommendation to integrate both approaches within the IPE curriculum. By combining structured case discussions with interactive roleplay, students can benefit from a balance between analytical thinking and experiential practice, ultimately preparing them for effective teamwork in real-world healthcare settings.

## 4 Conclusion

This study concludes that both case discussion and scenario-based roleplay are effective strategies for enhancing students' interprofessional collaboration competencies. Statistical analysis revealed no significant difference between the two methods; however, descriptively, roleplay produced a slightly higher mean score than case discussion.

These findings suggest that the two methods should be considered complementary rather than alternative strategies. Case discussion supports reflective analysis and conceptual understanding, while roleplay provides interactive, practice-oriented experiences that closely resemble real clinical settings. Integrating both approaches into the Interprofessional Education (IPE) curriculum may therefore optimize student learning outcomes and better prepare them for collaborative professional practice.

Future research should involve larger and more diverse samples, employ different study designs, and incorporate both subjective and objective assessment methods. Such efforts would provide a more comprehensive and generalizable understanding of the effectiveness of IPE teaching strategies. On the findings, the researchers concluded that the factors associated with earthquake preparedness among BPBD officers in Bantul Regency include education, prior volunteer experience, and attitude, while gender was not found to have a relationship with earthquake preparedness.

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## References

- [1] J. Thistlethwaite, "Interprofessional education: a review of context, learning and the research agenda," *Med. Educ.*, vol. 46, no. 1, pp. 58–70, Jan. 2012, doi: 10.1111/j.1365-2923.2011.04143.x.
- [2] M. G. Sezgin and H. Bektas, "Effectiveness of interprofessional simulation-based education programs to improve teamwork and communication for students in the healthcare profession: A systematic review and meta-analysis of randomized controlled trials," *Nurse Educ. Today*, vol. 120, 2023, art. no. 105619, doi: 10.1016/j.nedt.2022.105619.
- [3] E. Abu-Rish, D. Kim, V. Choe, et al., "Current trends in interprofessional education of health sciences students: A literature review," *Journal of Interprofessional Care*, vol. 26, no. 6, pp. 444–451, 2012, doi: 10.3109/13561820.2012.715604.
- [4] G. J. Ciani, R. Patel, and D. Thompson, "The impact of interprofessional education event using role-playing and team-case discussions on professional identity and

- interprofessional perceptions,” *Educ. Sci*, vol. 13, no. 5, p. 494, 2023, doi: 10.3390/educsci13050494.
- [5] A. E. Cortés-Rodríguez, P. Roman, M. M. López-Rodríguez, et al., “Role-Play versus Standardised Patient Simulation for Teaching Interprofessional Communication in Care of the Elderly for Nursing Students,” *Healthcare*, vol. 10, no. 1, p. 46, 2022, doi: 10.3390/healthcare10010046.
- [6] S. M. Azfar, S. Saeed, S. Masood, et al., “Role play versus video-based learning for interprofessional communication and teamwork skills in nursing and medical students: a mixed-methods study,” *BMC Medical Education*, vol. 25, no. 1, p. 704, 2025, doi: 10.1186/s12909-025-06840-5.
- [7] P. Krielen, M. Meeuwse, E. C. T. H. Tan, et al., “Interprofessional simulation of acute care for nursing and medical students: interprofessional competencies and transfer to the workplace,” *BMC Med. Educ*, vol. 23, art. no. 105, 2023, doi: 10.1186/s12909-023-04053-2.
- [8] D’souza C., Jain A., Mandal T., et al., “An educational approach using interprofessional (IP) role plays and patient narratives to inculcate empathy and communication among undergraduates in breast cancer management,” *BMC Medical Education*, vol. 24, p. 1320, 2024, doi: 10.1186/s12909-024-05997-9.
- [9] S. Y. Guraya, “The effectiveness of interprofessional education in healthcare: A systematic review and meta-analysis,” *Saudi Medical Journal*, vol. 39, no. 5, pp. 437–444, 2018, doi: 10.15537/smj.2018.5.22089.
- [10] A. Sanko, S. Chu, R. Dahlke, et al., “Using role-play simulation to enhance interprofessional education: An integrative review,” *Journal of Interprofessional Care*, vol. 35, no. 4, pp. 600–608, 2021, doi: 10.1080/13561820.2020.1791800.
- [11] L. Kong, A. Smith, and D. Reyes, “What is the effect of different interprofessional education teaching strategies on healthcare professions students’ interprofessional learning outcomes? A systematic narrative review,” *Nurse Education in Practice*, vol. 83, 2025, article 104255, doi: 10.1016/j.nepr.2025.104255.
- [12] H. W. Chen, J. M. O'Donnell, Y. J. Chiu, et al., "Comparison of learning outcomes of interprofessional education simulation with traditional single-profession education simulation : a mixed-methods study," *BMC Med. Educ.*, vol. 22, no. 1, p. 651, Aug. 2022, doi: 10.1186/s12909-022-03640-z.