

## Bridging Theory and Practice: The Role of Experiential Learning in Deepening Understanding of Industrial Relations

Suhaimi Abd Samad<sup>1</sup>, Siti Nur Fathanah Abd Hamid<sup>1\*</sup>, Syahrina Adliana Abdul Halim<sup>1</sup> and Mohammad Bastyan Mahmud<sup>1</sup>

<sup>1</sup> Faculty of Administrative Science and Policy Studies, Universiti Teknologi MARA,  
Negeri Sembilan Branch, Seremban Campus

Corresponding Author: [fathanah@uitm.edu.my](mailto:fathanah@uitm.edu.my)

### Abstract

*This study explores the implementation of role play as an experiential learning tool in the Principles of Industrial Relations (PAD363) course at Universiti Teknologi MARA. The objective is to evaluate how role play enhances students' understanding of industrial relations concepts while fostering problem-solving, communication, and collaborative skills. The methodology involves task-based learning where students, in groups of 7-8, develop and perform role play scenarios reflecting real-world industrial issues, such as labour disputes and collective bargaining. Data were collected through video recordings of the role plays and reflective essays, which were analysed to assess the students' learning experiences. Findings indicate that role play effectively bridges the gap between theoretical knowledge and practical application, enabling students to grasp complex industrial relations processes more thoroughly. Students reported increased comprehension, improved teamwork, and the acquisition of new skills like acting and video editing. Furthermore, the activity enhanced interpersonal relationships, creating a supportive learning environment. This study underscores the value of experiential learning in industrial relations education, suggesting that role play can serve as a dynamic and engaging pedagogical approach to reinforce both academic understanding and real-world competencies.*

**Keywords:** Role Play, Experiential Learning, University students

### LITERATURE REVIEW

Received: 1 August 2025  
Accepted: 1 September 2025  
Published: 31 October 2025

The use of role play as a pedagogical tool has been widely examined across educational disciplines, with most scholars agreeing on its value in bridging the gap between theoretical knowledge and practical application. Role play allows students to step into simulated scenarios, adopt particular roles, and explore subject matter in an experiential manner. According to Siegle et al. (2020), this active engagement helps learners move beyond memorization and fosters deeper conceptual understanding. Similarly, Stevens (2015) stresses that role play transforms students from passive recipients of information into active participants, encouraging them to develop ownership of their learning. In research undertaken by Aura et al. (2023), they further support this by showing that role play creates authentic and dynamic classroom environments where students can experiment with different perspectives, make decisions, and reflect on outcomes.

Studies across diverse fields, including medicine, law, teacher education, and business, have demonstrated the effectiveness of role play. For instance, in medical education, for instance, role play is used to simulate patient–doctor interactions, providing students with safe yet realistic opportunities to practice communication and diagnostic skills (Haleem et al., 2022). In teacher training, role play helps preservice teachers prepare for classroom management challenges by practicing strategies for handling disruptive behavior or diverse learning needs (Okolie et al., 2021). In business and law education, role play has been employed to simulate negotiations, courtroom proceedings, or conflict resolution scenarios, enabling students to hone decision-making, persuasion, and critical thinking abilities (Azar et al., 2023). Collectively, these studies highlight that role play does more than enhance subject comprehension; it also fosters transferable skills such as empathy, teamwork, and problem-solving, which are essential for professional success in the 21st century.

Research also highlights the cognitive and affective dimensions of role play. Stampfl et al. (2024) found that simulated activities make abstract or difficult concepts more concrete, improving comprehension and retention. At the same time, students often report higher levels of motivation and emotional engagement when learning through role play compared to traditional lecture-based approaches. Emotional investment in a role can help students connect more meaningfully to content, promoting empathy and perspective-taking—skills especially valuable in fields that require understanding of human relationships and interactions (Ekizer & Sarı Yıldırım, 2023). Despite the breadth of research supporting role play, several limitations remain. First, much of the existing literature is discipline-specific and heavily concentrated in professional programs such as medicine and law, where role play naturally lends itself to practice-based scenarios. Findings from these contexts, while compelling, may not fully transfer to other fields such as industrial relations, where interactions between multiple stakeholders—employers, employees, trade unions, and policymakers—introduce unique complexities.

Second, many studies rely predominantly on self-reported perceptions from students, often collected through surveys or reflective journals. While such data provides useful insights into learner satisfaction and perceived value, it may not adequately capture whether students' skills and knowledge are retained or effectively applied in real-world contexts. Longitudinal studies that track outcomes over time are relatively scarce, making it difficult to determine the long-term impact of role play on professional competencies. Third, methodological limitations are evident in much of the

research. Several studies use small sample sizes, often restricted to a single class or cohort, which limits generalizability. Others adopt one-off or short-term interventions, making it difficult to distinguish between novelty effects and sustained learning benefits. Additionally, relatively few studies incorporate rigorous assessment frameworks to measure outcomes beyond student enjoyment or engagement. This raises questions about how effectively role play has been evaluated as a formal pedagogical and assessment strategy.

Finally, while role play has been praised for its ability to enhance collaboration and communication, some scholars note potential challenges in implementation. For example, poorly designed scenarios may lead to superficial role enactments that fail to achieve deep learning (Stevens, 2015). Similarly, unequal participation within groups or lack of clear assessment criteria can diminish its effectiveness. These critiques underscore the need for careful instructional design and ongoing refinement of role play activities.

In the specific field of industrial relations, research on the use of role play remains limited. Although scholars acknowledge that understanding labor relations requires engaging with the perspectives of diverse stakeholders—including employers, employees, trade unions, and government bodies—most instructional approaches continue to rely on traditional methods such as lectures, readings, and case studies. These methods, while useful for transmitting knowledge, may not fully prepare students to navigate the nuanced and often contentious dynamics of real-world workplace relations. Few studies have systematically examined how role play can enhance industrial relations education. Existing work tends to focus on case analysis, which develops critical reasoning but may lack the immersive and interactive qualities of role play. There is also little evidence on how role play impacts students' acquisition of negotiation, mediation, and conflict resolution skills—competencies that are central to the practice of industrial relations. This represents a significant gap, given that these skills are increasingly emphasized in contemporary workplace contexts where adaptability, problem-solving, and communication are essential (Haleem et al., 2022).

Hence, it is argued that the literature suggests—while role play has been widely acknowledged as a valuable pedagogical tool, its application has been uneven across disciplines, with industrial relations receiving comparatively little attention. Moreover, existing studies often lack methodological rigor, rely on short-term or self-reported outcomes, and provide limited evidence of long-term impact. This study seeks to

address these gaps by investigating students' lived experiences of role play as an assessment tool in the Principles of Industrial Relations (PAD363) course at Universiti Teknologi MARA. By examining how students prepare for and engage in role-play activities, as well as how they perceive its impact on their learning, the study contributes to a deeper understanding of the method's effectiveness in this specific academic context. Unlike prior research that emphasizes surface-level engagement or discipline-specific applications, this study aims to highlight both the pedagogical benefits and the challenges of role play in industrial relations education. In doing so, it provides empirical evidence that can inform the design of more meaningful, rigorous, and student-centered assessment practices in higher education.

## METHODOLOGY

This study employs a practical, task-based assessment to evaluate students' understanding and application of industrial relations concepts. The assessment is designed to test practical skills by simulating real-world industrial scenarios through role play. This methodological approach emphasizes the application of theoretical knowledge to realistic contexts, enabling students to demonstrate their comprehension of industrial relations processes and their capacity to navigate complex labor-management interactions effectively.

### *Assessment Framework*

The primary objective of this assessment is to measure students' problem-solving abilities within the scope of industrial relations. Problem-solving is defined as the ability to identify and define issues, generate and evaluate alternative solutions, make informed decisions, and implement those decisions effectively. The assessment is structured to guide students through a comprehensive problem-solving process:

- 1) Define or Identify the Problem: Students present a case involving an industrial relations issue, such as a labor dispute between management and employees.
- 2) Generate Alternative Solutions: Students propose multiple solutions to address the dispute, considering legal, ethical, and practical dimensions.
- 3) Evaluate and Select Alternatives: Students analyze the advantages and disadvantages of each proposed solution, incorporating industrial relations laws, fairness, and business sustainability.

- 4) **Make a Decision:** Based on their evaluation, students select the most viable solution to resolve the issue.
- 5) **Implement the Solution:** Students outline a practical implementation plan, considering negotiation strategies, communication methods, and follow-up procedures.

### *Implementation Procedure*

The implementation procedure is divided into several steps, which are:

- 1) **Group Formation:** Students are organized into groups of 7-8 members. Each group member assumes a specific role related to the industrial relations scenario, such as a labor union representative, management, or employee. This collaborative structure ensures active participation and diverse role representation.
- 2) **Role Play Scenario Development:** Groups select a relevant industrial relations scenario aligned with course content, specifically focusing on topics covered which included trade unions, trade union constitutions and management, the rights and responsibilities of employees, employers, and trade unions, as well as ethics in industrial relations. This ensures the scenario is both academically rigorous and contextually relevant.
- 3) **Script Development:** Each group collaboratively drafts a script that clearly defines each participant's role and dialogue. The script must reflect core industrial relations concepts and emphasize problem-solving and decision-making processes. Scripts are structured to fit an 8-minute performance window, ensuring concise and focused presentations.
- 4) **Video Recording:** Groups are responsible for recording their role play in an appropriate setting with adequate lighting, clear audio, and minimal background noise. The recording must capture each participant's contribution and accurately depict real-world industrial relations practices.

The primary data sources for this methodology include the recorded role play videos and the accompanying reflective essays and take-out points. These artifacts are analysed to assess students' problem-solving capabilities, understanding of industrial relations concepts, and their ability to apply theoretical knowledge to practical scenarios. The reflections also provide insights into the effectiveness of the role play exercise in fostering collaborative learning and critical thinking skills.

### *Theoretical Application*

This study is explained through the context of Experiential Learning Theory (ELT), developed by David Kolb (1984), which views learning as a cyclical process in which knowledge emerges through the transformation of experience. Unlike traditional models of education that position learners as passive recipients of information, ELT emphasises that meaningful learning occurs when students actively engage with experiences, reflect upon them, and apply the insights gained to new contexts. The theory has been widely applied in higher education to explain how students develop deeper understanding and transferable skills through hands-on and practice-based activities. In addition, Kolb's model identifies four stages of the learning cycle: concrete experience, reflective observation, abstract conceptualisation, and active experimentation. These stages are interconnected, and effective learning occurs when learners move through the entire cycle rather than engaging in a single phase:

- Concrete experience: Learners encounter a new situation or engage in a re-interpretation of an existing experience. In role play, this occurs when students step into assigned roles (e.g., trade union representatives, employers, or employees) and participate in simulated industrial relations scenarios. They are required to act, communicate, and make decisions as if in a real-world setting, creating an immersive learning experience.
- Reflective observation: After the activity, learners reflect on what occurred. They may consider how they performed in their roles, what strategies were effective, where misunderstandings arose, and how group interactions shaped outcomes. Reflection enables students to critically assess both their own contributions and those of others.
- Abstract conceptualization: At this stage, learners integrate their reflections with theoretical knowledge. For example, students might connect their experiences in negotiating a workplace conflict with principles of collective bargaining or industrial dispute resolution covered in lectures. This step allows them to form new insights and refine their understanding of abstract concepts.
- Active experimentation: Finally, learners test these new insights in future scenarios. Within the classroom, this may mean adjusting strategies in

subsequent role play activities, while beyond the classroom it prepares them to apply similar approaches in professional contexts. This step emphasises the transferability of learning from simulated experiences to real-life challenges.

By engaging students in this cycle, role play provides more than surface-level engagement; it cultivates deep learning by reinforcing the continuous movement between experience, reflection, conceptualisation, and experimentation. Importantly, it helps learners see the relevance of theoretical knowledge by situating it within lived practice. In the specific context of industrial relations education, ELT provides a strong rationale for adopting role play. This is because industrial relations is characterised by complex negotiations, competing interests, and dynamic problem-solving, all of which are difficult to fully capture through lectures alone. Through role play, students experience these complexities in a controlled environment, allowing them to test theoretical ideas in practice. For example, when negotiating as union representatives, they not only learn about union rights and labor law but also confront the emotional, strategic, and communicative aspects of negotiation. This combination of cognitive understanding and experiential practice is precisely what ELT identifies as the foundation for lasting, transformative learning.

## FINDINGS

Eight groups participated in the data analysis process. When asked about their experiences, all students agreed that the role-play activity significantly enhanced teamwork. They engaged in extensive brainstorming, discussions, and idea-sharing to make the role play interactive, interesting, and engaging. The findings are presented below:

*Furthermore, we get experience to share diverse of idea. It enables participants to exchange a variety of ideas, which results in more creative and comprehensive solutions. When people with diverse experiences, backgrounds and abilities work together, they offer distinct viewpoints that can improve problem-solving skills (Group 1).*

*We worked together to create a script or outline for the role play, deciding whether to focus on detailed dialogue or a flexible structure. Key dialogue points and actions were agreed upon through collaborative discussions, ensuring everyone's input was considered (Group 6).*



*The group role play was engaging and collaborative in its participation. Each participant (group member) contributed their different perspectives and thought, making the simulation of an office conversation lively and authentic (Group 8).*

*Preparing the script required a lot of brainstorming sessions. Some ideas clashed, especially when balancing employee and employer perspectives, but we worked through them by discussing and finding middle ground (Group 2).*

*Therefore, the experience has also produced an almost perfect task when each group member gives full cooperation and commitment in carrying out each other's tasks to complete this task (Group 4).*

*We worked according to deadline and in synchronisation with each other [...] we able to brainstorm together so everyone knew what other members was writing about (Group 3).*

*We supported each other, helped create a positive working atmosphere, and our teamwork really improved our performance (Group 5).*

*In order to accomplish the intended result, the team takes advantage of this organised approach by staying focused, managing time well and cooperating (Group 7).*

Throughout the process of analysing the data, this study also found that students enjoyed this type of learning activity. These findings suggest that incorporating experiential learning activities like role play can significantly enhance both academic and interpersonal competencies in industrial relations education. The findings are exemplified below:

*Moreover, we also have fun doing this role play as it can create good memories with all the team members. We are able to spend more time together in a meaningful and concentrated manner (Group 1).*

*Apart from the knowledge gained from the role play activities carried out with our group mates, we feel closer to each other and successfully create another new experience together by finding and analysing the given task and how to complete this task. In other words, this task not only opens our minds to think more carefully about industrial relations and the given role play topic, but this task can also bridge the gap in friendship and cooperation between us in a group (Group 4).*

*Despite the fact that this assignment required a lot of retakes and errors, we enjoyed acting with our group members. Although controlling background noise and locating appropriate shooting settings were difficult tasks, they also added to the process*



*satisfaction. We enjoyed learning new skills such as acting and editing the unfinished video (Group 5).*

*Most members were satisfied with their roles, though some required adjustments to accommodate everyone's abilities and comfort levels (Group 6.)*

Additionally, some participating students agreed that the role-play activity enhanced their knowledge and critical thinking skills. They believed it improved their understanding of industrial concepts and processes. The findings are presented below:

*We gained useful acting and critical thinking abilities by taking part in the role play. It tested our ability to adopt several personas, delve into feelings, and effectively communicate ideas. Quick thinking and problem-solving skills were necessary for scenario analysis (Group 1).*

*In other words, this task not only opens our minds to think more carefully about industrial relations and the given role play topic, but this task can also bridge the gap in friendship and cooperation between us in a group (Group 4).*

*In the hustle, we were able to help one another, pool resources together, and finally enhance our understanding of the subject matter by putting our minds together (Group 5).*

However, several groups admitted that they struggled to complete the task for various reasons. These included the time required to fully understand their roles, the need for extensive practice, a tight preparation schedule, and other challenges. The findings are exemplified below:

*Each group member was assigned a specific role, such as legal, ethical or employer representative. It took time to fully understand the roles and responsibilities, as we needed to ensure every perspective was presented clearly (Group 2).*

*Our group practices the scenario multiple times providing constructive feedback to each other on their performance (Group 3).*

*With our schedules and lack of time, it was quite impossible for the group to get the assignment ready for such a test-filled week (Group 5).*

## DISCUSSION AND CONCLUSION

The findings of this study demonstrate that role play is an effective pedagogical strategy for enhancing teamwork, engagement, and critical thinking in the context of industrial relations education. This directly addresses Research Objective 1, which sought to explore how role play contributes to student collaboration and engagement. The data revealed that students engaged in extensive brainstorming, negotiation, and collective decision-making, which confirms that role play fosters collaboration and communication in meaningful ways. These results align with the work of Aura et al. (2023), who found that role play improved student engagement and participation. However, unlike Aura et al., who emphasised communication skills as the main outcome, the present study also highlights the development of teamwork, negotiation, and conflict-resolution skills, all of which are crucial in industrial relations practice.

In the context of Research Objective 2, which examined whether role play deepens students' conceptual understanding of industrial relations, the findings indicate that role play enabled students to connect theoretical frameworks with practical, real-world applications. Several participants reported that enacting the roles of trade union leaders, employers, or employees allowed them to better understand the competing interests and complexities inherent in industrial relations. These results are consistent with Kong (2021), who argued that role play bridges the gap between classroom knowledge and professional practice. Yet this study extends the discussion by showing that role play does not merely reinforce theoretical understanding, but also encourages strategic thinking, empathy, and analytical skills when students are faced with conflicting perspectives and have to negotiate solutions.

In comparing these findings with other research, several points of convergence and divergence emerge. In research done by Winardy and Septiana (2023), they observed that role play primarily enhanced participation and motivation in students. While similar outcomes were evident in the present study, our findings suggest that the benefits extend beyond mere participation to include discipline-specific competencies. In industrial relations education, role play uniquely cultivates negotiation, compromise, and stakeholder awareness—competencies not emphasised in generic role-play contexts. Similarly, while Azar et al. (2023) noted the role of role play in fostering empathy, this study provides empirical evidence that such empathy is applied directly to workplace issues, thereby creating opportunities for students to understand the ethical and relational dimensions of industrial disputes. These points of extension demonstrate

that role play is not only a general pedagogical tool but one that can be tailored to the specific requirements of professional disciplines.

The study also provides important insights into challenges associated with implementing role play. Students reported that limited preparation time, the need for repeated practice, and the complexity of understanding their roles created stress and hindered their overall learning experience. These findings echo the concerns raised by Zarifsanaiey et al. (2024), who emphasised that interactive learning strategies demand sufficient time and resources to be effective. This study, therefore, highlights the tension between the aspirations of innovative pedagogy and the practical constraints of classroom delivery. While the role play exercise was found to be beneficial overall, its success depends on careful planning, clear instructions, and realistic timeframes.

Although this study contributes to the literature on experiential learning and role play, several limitations must be acknowledged. Firstly, the study was confined to a single institution and one course (Principles of Industrial Relations), which limits the transferability of findings to other disciplines or educational contexts. Secondly, the data relied primarily on students' self-reported experiences, which, while valuable, may be subject to bias or selective recall. Objective measures of learning outcomes—such as assessment scores or skill demonstrations—were not included. Thirdly, logistical constraints, such as insufficient time and resources, were identified but not systematically measured, leaving their precise impact unclear.

Future research should address these limitations in several ways. Comparative studies across different institutions, courses, or cultural contexts could establish whether the benefits of role play are consistent across settings. Mixed-method approaches that combine student reflections with quantitative measures of learning outcomes would provide more robust evidence of its effectiveness. Longitudinal research could investigate whether the skills developed through role play—such as negotiation, communication, and conflict resolution—persist beyond the classroom and are transferred into graduates' professional practice. Finally, future studies could compare role play with other experiential approaches, such as simulations, problem-based learning, or case analysis, to determine its relative strengths and limitations.

Apart from that the findings of this study also hold practical implications for educators and curriculum designers. Instructors should consider incorporating role play not merely as an assessment tool but as an integral component of course design, ensuring that sufficient time and resources are allocated for preparation and reflection. Guidance and scaffolding are essential: students reported that clearer instructions and more opportunities to rehearse would have improved their learning experience. Moreover, integrating structured reflection sessions following role play could help students to connect their experiences more explicitly with theoretical frameworks, thereby enhancing the experiential learning cycle. At the institutional level, the study suggests the need for policies that support innovative teaching strategies, including timetabling flexibility and training for lecturers in the design and facilitation of role-play activities.

In conclusion, this study argues that role play is a powerful pedagogical method that enhances teamwork, critical thinking, and conceptual understanding in industrial relations education. By situating the findings within Kolb's Experiential Learning Theory, the study illustrates how role play allows students to move through the stages of concrete experience, reflective observation, abstract conceptualisation, and active experimentation. Unlike some previous studies that have emphasised communication or participation as the primary outcomes of role play (Aura et al., 2023; Winardy & Septiana, 2023), this research highlights its value in developing discipline-specific competencies such as negotiation, conflict resolution, and stakeholder analysis. At the same time, the challenges identified—particularly in relation to time and preparation—underscore the need for careful design and institutional support.

### ***Acknowledgements***

The researchers would like to express their sincere appreciation to the students of Principles of Industrial Relations (PAD363), Faculty of Administrative Science and Policy Studies (FSPPP), Universiti Teknologi MARA (UiTM), for their valuable contributions and participation in this study. Special thanks are also extended to the faculty for their continuous support, guidance, and encouragement throughout the research process.

### **Funding**

This study was conducted without any external funding.

### **Author contributions**

Dr Suhaimi Abd Samad's expertise includes industrial relations and social security, with a particular interest in bridging theoretical knowledge with real-world applications.

Dr Siti Nur Fathanah Abd Hamid specialises in sociology. Her research focuses on human behaviour—particularly in the context of active learning behaviours that enhance student engagement and critical thinking skills.

Ms. Syahrina Adliana Abdul Halim, with a background in industrial relations, has contributed to research on problem-solving strategies in education and the effectiveness of interactive learning activities.

Mr. Mohammad Bastyan Mahmud specialises in student-centred online learning. He is interested in exploring innovative teaching approaches that improve collaboration, decision-making, and practical knowledge acquisition.

### **Conflict of interest**

There is no conflict of interest in this publication.

### **References**

- Azar, N., Yazdani, S., & Khoshgoftar, Z. (2023). The critical thinking process: A holistic view to promote critical problem-solving in health profession education. *Journal of Medical Education*, 22, Article e135024. <https://doi.org/10.5812/jme-135024>.
- Aura, I., Järvelä, S., Hassan, L., & Hamari, J. (2023). Role-play experience's effect on students' 21st century skills propensity. *The Journal of Educational Research*, 116(3), 159–170. <https://doi.org/10.1080/00220671.2023.2227596>.

- Ekizer, F. N., & Sari Yıldırım, S. (2023). 21st century skills and learning environments: ELT students' perceptions. *Educational Research and Reviews*, 18(6), 114-128. <https://doi.org/10.5897/ERR2023.4332>.
- Haleem, A., Javaid, M., Qadri, M. A., & Suman, R. (2022). Understanding the role of digital technologies in education: A review. *Sustainable Operations and Computers*, 3, 275–285. <https://doi.org/10.1016/j.susoc.2022.05.004>.
- Kolb, David. (1984). *Experiential learning: Experience as the source of learning and development*. Englewood Cliffs, NJ: Prentice Hall.
- Kong, Y. (2021). The role of experiential learning on students' motivation and classroom engagement. *Frontiers in Psychology*, 12, 771272. <https://doi.org/10.3389/fpsyg.2021.771272>.
- Okolie, U., Igwe, P., Kalu Mong, I., Nwosu, H., Kanu, C., & Ojemuyide, C. (2021). Enhancing students' critical thinking skills through engagement with innovative pedagogical practices in Global South. *Higher Education Research & Development*, 41(1), 1–15. <https://doi.org/10.1080/07294360.2021.1896482>.
- Siegle, R., Roscoe, R., Schroeder, N., & Craig, S. (2020). Immersive learning environments at scale: Constraints and opportunities. *Proceedings of the Human Factors and Ergonomics Society Annual Meeting*, 64(1), 1165–1169. <https://doi.org/10.1177/1071181320641278>.
- Stevens, R. (2015). Role-play and student engagement: Reflections from the classroom. *Teaching in Higher Education*, 20(5), 1–12. <https://doi.org/10.1080/13562517.2015.1020778>.
- Stampfl, R., Ivkić, I., & Geyer, B. (2024). Role-playing simulation games using ChatGPT. *ERCIM News*, 136, 14–15. <https://ercim-news.ercim.eu/en136/special/role-playing-simulation-games-using-chatgpt>.
- Winardy, G. C. B., & Septiana, E. (2023). Role, play, and games: Comparison between role-playing games and role-play in education. *Social Sciences & Humanities Open*, 8(1), 100527. <https://doi.org/10.1016/j.ssaho.2023.100527>.
- Zarifsanaiey, N., Farrokhi, M. R., Karimian, Z., Hoseini, S., Chahartangi, F., & Shahraki, H. R. (2024). Lessons learned from assessing teachers' and students' perspectives regarding the quality of e-learning in medical education during the pandemic: A mixed-methods study. *BMC Medical Education*, 24(1), 171. <https://doi.org/10.1186/s12909-024-05160-4>.