Utilising lectures with pharmacy, occupational therapy and nursing students: A pre-COVID-19 pandemic perspective

T Brown,[1] PhD, MSc, MPA, BScOT(Hons), GCHPE, OT(C), OTR, MRCOT, FOTARA, FAOTA;
M-L Yu,[1] PhD, M Occ Th, BSc(OT), GCHPE; **D Malone,**[2] PhD, BPharm(Hons)

[1] *Department of Occupational Therapy, School of Primary and Allied Health Care, Faculty of Medicine, Nursing & Health Sciences, Monash University – Peninsula Campus, Victoria, Australia*
[2] *Faculty of Pharmacy and Pharmaceutical Sciences, Monash University – Parkville Campus, Victoria, Australia*

Corresponding author: *T Brown (ted.brown@monash.edu)*

Background. Lectures are a fundamental aspect of teaching and learning in higher education, significantly impacting students' academic achievements.
Objective. To investigate students' reasons for attending in-person lectures and identify the factors and traits they associate with positive learning experiences.
Methods. The data were collected through interviews with 36 third-year undergraduate students from pharmacy, occupational therapy and nursing & midwifery enrolled at Monash University. Focus groups were reviewed, analysed and coded using a conventional content analysis approach.
Results. Four major themes that influenced students' decisions to attend lectures were identified: (*i*) consolidation of learning; (*ii*) use of visual and auditory techniques; (*iii*) opportunities for student input and (*iv*) the lecture's relevance to their future practice.
Conclusion. The present study found that students perceive live lectures as useful when they offer a thorough understanding of a subject, effectively incorporate audio-visual materials, provide opportunities for engagement and interaction with lecturers and prepare students for exams and future careers. Utilising interactive quizzes and visual aids, facilitating access to educators for students to ask questions and lecturers' use of varied tones and humour when covering difficult concepts were viewed as beneficial by students. These findings may assist faculty in improving attendance rates at live lectures.
Keywords. Lectures; attendance; pharmacy students; occupational therapy students; nursing students.

Afr J Health Professions Educ 2025;17(1):e2335. https://doi.org/10.7196/AJHPE.2025.v17i1.2335

University lectures are an integral part of tertiary education, offering an economical and productive method of transferring knowledge, particularly to large cohorts of students.[1] They introduce students to different challenging topics, allowing them to explore material from different perspectives, which facilitates independent thinking and critical reasoning. For health professions students, live lectures provide the discipline-specific knowledge and practical skills required for future practice, often delivered using clinical scenarios and case studies.[2] However, there has been a notable steady decrease in students' physical attendance at lectures, with many favouring delayed online viewing of lecture recordings or skipping lectures altogether.[3,4]

Following the return to on-campus teaching and learning after the move to online learning during the COVID-19 pandemic, there has been an even greater decrease in both face-to-face lecture attendance and the use of real-time lectures as an education method. Reported reasons for non-attendance include poor lecture quality,[5] lecturer's presentation style,[6] engagement in social activities,[4] transport problems getting to campus,[7] scheduling conflicts[8] and lack of engagement with lecture content.[9]

Given the significant association between lecture attendance and positive academic outcomes reported in many studies, this decline in attendance should be alarming for all tertiary educators, considering it can impact examination performance.[10-14] For instance, Doggrell's study[15] of nursing and non-nursing students found a potential association between students' attendance and academic performance. These findings suggest that some students may have performed better if they had attended more lectures and/or been more engaged in their course. Curriculum content, student motivation, time investment and self-regulated learning are further known predictors of students' academic performance.[16-18]

A key motivation for attending face-to-face lectures is social expectations and the desire to participate in the 'social aspects of learning'.[19-20] This aligns with the belief that lecture attendance is an integral part of both the overall learning experience and the acquisition of professional skills, traits and knowledge that may not be directly assessed by faculty.[8]

Studies on pharmacy students reveal that students who value purposeful active learning in live class settings were ~30% more likely to express a positive intention to attend lectures.[21] Research by Persky *et al.*[22] across six US pharmacy schools investigating factors that influence students' decision to skip class and their perceptions about the importance of classroom attendance, found that students may be less inclined to attend lectures when alternative methods, such as recordings and live streaming of classes, are available.

In the context of post-COVID-19 health sciences education, it is crucial to explore health professions students' perceptions of live lectures and the factors and traits they consider important for creating positive, effective and engaging learning experiences. The findings from this pre-pandemic study can guide faculty in designing and delivering contemporary, innovative and evidence-based lectures that fully engage students, boost attendance and performance and prepare them for their careers as health professionals. This study is unique in including participants from three diverse healthcare professions as part of the sample group.

Methods

Design

This qualitative pre-pandemic study used focus groups to explore how pharmacy, occupational therapy and nursing & midwifery students viewed and utilised lectures as learning opportunities. Convenience sampling was used to recruit participants and collect data.

Participants

Participants were recruited from domestic and international third-year undergraduate student cohorts at Monash University in 2019, enrolled in occupational therapy, pharmacy and nursing & midwifery courses (*N*=725). Potential participants completed an online survey in which demographic information was collected. The 87 students who completed the survey had to fulfil specific inclusion criteria to be eligible for participation in one of the focus groups (Table 1). Inclusion criteria required participants to be full-time third-year undergraduate students in pharmacy, occupational therapy or nursing and midwifery, fluent in written and spoken English. Potential participants were excluded from the focus group selection if they studied part-time or did not consent to having their answers recorded and published. Thirty-six participants met the full criteria and were included in the qualitative study.

Participants took part in one of four 1.5-hour discipline-specific focus groups, in which the following questions were asked:

- What is your definition of a lecture?
- What is the purpose of a lecture in the context of your subject?
- What are some features you would consider effective in a lecture that you would want to attend?
- What are the characteristics of an effective lecturer?
- What advice would you give to a lecturer when they're preparing to deliver a lecture to students in your chosen discipline?

Ethics approval statement

This study received approval from the Monash University Human Research Ethics Committee on 07 October 2019 (Ref. no. 21818).

Procedures

Students were initially invited to complete an online survey via an email sent to their student accounts with a survey link. The last question of the online survey asked students if they would be willing to take part in a focus group. In total, 36 out of 87 students consented to be approached for one of four discipline-specific focus groups: one for pharmacy, one for occupational therapy and two for nursing & midwifery.

The focus group meetings were conducted either in-person or online via Zoom, with both formats audio-recorded. At the start of proceedings, informed consent was obtained from each participant. Participants also completed a brief self-report demographic question either online or on paper. All audio-recordings were transcribed verbatim by an experienced independent research assistant for subsequent data analysis. The identities of the focus group participants were protected by removing all identifying information and assigning pseudonyms in the transcripts.

Two focus groups were conducted face-to-face: one with pharmacy students on an inner-city university campus offering a pharmacy degree, and the other with occupational therapy students on a suburban campus offering the occupational therapy course. Both sessions were held in classroom spaces, with students and the facilitator seated around a table. An audio-recording device was placed in the centre of the table to capture all verbal proceedings. The two in-person focus groups were held on a weekday at 2 pm during an academic semester, ensuring no conflicts with other scheduled teaching or learning commitments for the pharmacy and occupational therapy students.

The other two focus groups were conducted online via the Zoom video conferencing app at 5 pm on a weekday during an academic semester, with nursing & midwifery students. This was deemed to be the best time for this student group since they had scheduled clinical and academic commitments at other times.

Focus groups included 8 - 10 participants, a facilitator to pose questions and promote participation and a scribe to take summary notes during the session. Summary notes provided a source of triangulation during the content analysis of focus group transcripts. The four focus groups were facilitated by an experienced researcher who was not a member of the teaching and learning staff in each of the three disciplines. Participants were de-identified using pseudonyms.

Data analysis

Qualitative content analysis, a method for describing data by identifying themes and patterns across multiple texts, was used to review and code recorded transcripts. Specifically, the researchers adopted a conventional content analysis approach,[23] which avoids predefined categories. This approach involves deep engagement with the data to uncover new insights through inductive category development.[24,25]

The researchers reviewed the focus group transcripts and examined the data sentence by sentence to identify key impressions, thoughts or initial concepts inductively. The text was segmented into 'codes', which were then compiled into similar 'code categories' or 'themes' to efficiently summarise data.[26] Potential categories reflecting multiple ideas and impressions emerged, forming the initial coding scheme. These codes were organised into categories based on their relationships and connections. Subsequently, the researchers consolidated these categories into a smaller number of overarching themes.[27]

Transcripts were coded by two independent teams of 2 - 3 project team members, with each team's work cross-checked to minimise bias. The coding teams identified key themes and categories discussed by participants and compiled illustrative quotes to represent collective opinions from each discipline.[28] When differences were identified between teams, a consensus approach was used to resolve differences of opinion related to the coding and categorisation process, whereby each party gave their rationale for their decision and a vote was taken to decide final codes, categories and themes. The trustworthiness of the conventional content analysis was ensured via member checking, triangulation of the transcribed focus group proceedings with the scribes' notes, maintaining an audit trail of the study process and applying the consensus approach to resolve differences during coding.[29,30]

Results

Table 1 reports the number of groups and participants from each discipline. Extensive coding of transcripts revealed that participants mostly focused and gave opinions on four major themes (Fig. 1).

Theme 1: Consolidation of learning by reinforcing learned material and filling gaps in understanding

This theme focuses on how a lecturer ensures students gain a complete understanding of a subject or topic. It encompasses two categories: (*i*)

Table 1. Demographic information of focus group participants (third-year undergraduate occupational therapy, pharmacy and nursing & midwifery students, *N*=36)

	Occupational therapy, *n (%)*	Pharmacy, *n (%)*	Nursing & midwifery, *n (%)*	Total, *n (%)*
Focus groups per discipline, *n*	1	1	2	4
Focus group participants per discipline, *n*	8	9	19	36
Gender identity				
Female	6 (75)	5 (55.6)	18 (94.7)	29 (80.6)
Male	2 (25)	4 (44.4)	1 (5.3)	7 (19.4)
Prefer not to say	0	0	0	0
Highest level of education (not including current degree)				
High school	6 (75)	5 (55.6)	11 (57.9)	22 (61.1)
Bachelors	2 (25)	4 (44.4)	2 (10.5)	8 (22.2)
Other	0 (0)	0 (0)	6 (31.6)	6 (16.7)
Age range, (years)				
18 - 22	6 (75)	5 (55.6)	13 (68.4)	24 (66.7)
23 - 27	2 (25)	4 (44.4)	5 (26.3)	11 (35.6)
28 - 32	0	0	1 (5.3)	1 (2.3)
>33	0	0	0	0
Current course load based on credit point load				
Full-time	8 (100)	9 (100)	19 (100)	36 (100)
Part-time	0	0	0	0
Enrolment status				
Domestic	5 (62.5)	6 (66.7)	15 (78.9)	26 (72.2)
International	3 (37.5)	3 (33.3)	4 (21.1)	10 (27.8)

clarifying and consolidating known and learned material for students' understanding and (*ii*) effectively addressing gaps in their knowledge.

The first category involves explaining content in varied ways, using technology to simplify the content, and sharing examples from current professional practice. The second category relates to addressing gaps in understanding and responding to students' questions.

Theme 2: Visual and auditory techniques and traits

This theme focuses on student engagement and enhancement of the learning experience through visual and auditory techniques used in lectures and the personal traits exhibited by lecturers. It is divided into visual methods (lecture slides, diagrams and videos) and auditory methods (empathy, enthusiasm, passion and humour). Together, these approaches enhance student engagement and emphasise creating dynamic experiences that maximise student learning.

Theme 3: Opportunities for student input

This theme explores students' engagement, cooperation and input during lectures and their effect on students' overall support or apathy toward lectures. The first category discusses the work required of students before a lecture and participants' views on the importance of preparation work to maximise the benefits of lectures. The second category considers the qualities of a lecture that promote or deter student input and their interactions with lecturers and peers. The third category focuses on other factors that influence student attendance including elements of a lecture that cannot be controlled by lecturers such as timetabling and commuting distance, along with lecturer characteristics that either encourage or hinder attendance and participation.

Theme 4: Relevance of lectures to future practice of students

Participants shared their opinions on the usefulness of lectures in enhancing personal performance and abilities. The first category examines how effectively lectures help students prepare for assessments and the second focuses on how lectures equip students to apply their knowledge during practice placements and in their future careers.

Discussion

Consolidation of learning

In this study, students highlighted the importance of direct access to lecturers during lectures, enabling them to seek clarification on topics and guidance for their learning. They also noted that opportunities to ask questions and interact with their peers fostered a sense of belonging. For example, one student observed that a lecturer's response benefits not only the individual asking the question but the entire group.

This finding aligns with post-COVID studies, which identified the immediate availability of lecturers to answer students' questions as a significant factor influencing attendance at in-person sessions.[6,11,31] Further research also lends credence to the notion that in-class lectures provide opportunities for students to clarify potential misunderstandings and consolidate their learning through group learning activities and discussions.[32,33] Mokhtari *et al.*[31] also emphasise that poor attendance can adversely affect health students' learning by depriving them of 'accessing relevant information and contact with relevant materials (clinical skills, lectures and practical sessions) necessary for active learning'. However, another study found that the availability of video-recorded lectures also benefits students' reinforcement of learning by allowing them to customise the delivery of content such as the facility to slow down, speed up or repeat sections.[6]

Use of visual and auditory techniques and lecturer traits

Students' feedback on the engaging use of visual materials to capture attention and enhance learning is significant, as it mirrors findings on students' perceptions of their learning environment. For instance, Mokhtari *et al.*[31] identified lecturers' proficiency in using audio-visual tools to deliver course content as a key factor in promoting student engagement during live lectures. This is particularly relevant for Generation Z students, who often expect immediate access to visually delivered information and direct interactions in educational settings.[34] Practical applications include active learning strategies such as flipped classrooms and problem-based teaching approaches,[35] highlighting the importance of interactive audio-visual and web-based content delivery in supporting student learning.[31]

Forsgren *et al.*[36] explored factors influencing nursing students' attendance at live lectures and reported that students value lecturers' skilful,

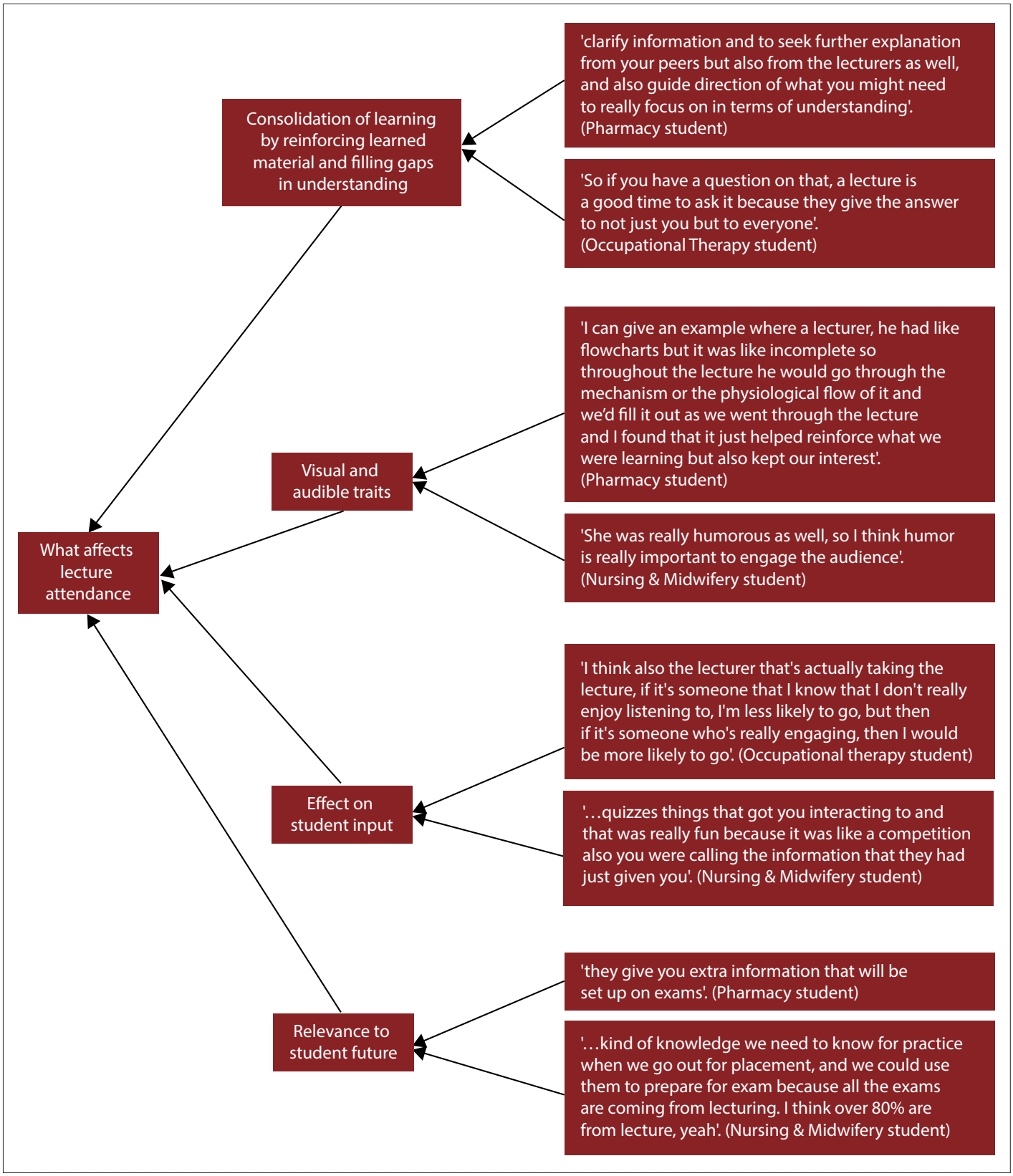

Fig. 1. Main themes and illustrative quotes from the content analysis of the three cohorts' responses to the focus group questions.

creative and engaging use of audio-visual materials, similar to our findings. When educators use PowerPoint presentations as a tool and are not governed by it, it results in a more rewarding and educative experience for students. Further, studies report that lecturers who skilfully incorporate stimulating audio-visual content and interactive activities foster better student understanding and application of the material. These practices also encourage participation in active learning exercises, ultimately increasing students' likelihood of attending lectures.[21,37-39]

In the current study, students noted the importance of the lecturer's use of humour and varied tone when explaining difficult concepts. This aligns with previous research on lecturers' presentation style indicating that students often determine a lecture's usefulness based on the lecturer's personality and speaking style.[6] In a study of nursing students, Bati *et al*.[1] found that 40% of participants considered a lecturer's ability to facilitate learning – whether engaging or dull – a significant factor influencing their decision to attend lectures.

When lecturers are perceived as lacking presentational skills, showing little commitment, being difficult to listen to or demonstrating unclear thinking, students do not feel supported in their learning.[36] Yet, when lecturers make sessions rewarding, compelling and easy to follow, and provide opportunities for students to ask questions, students are more engaged and view both the lecturer and the content positively.[36]

Opportunities for student input

Students' comments on the importance of completing preparatory tasks ahead of lectures to consolidate knowledge before moving on to the next topic are encouraging, especially given the literature suggesting that failure to prepare is a common reason for non-attendance.[8,40,41] Attendance rates were associated with students' sense of accountability for their learning and preparation for course content.[42] This suggests that when students feel invested in their learning, they are more likely to attend and prepare for lectures.

Moreover, students acknowledged that lecture attendance is often influenced by the lecturer's presentation style and their ability to actively engage students. This is consistent with findings elsewhere that a professor's style can discourage lecture attendance.[6] It also supports studies describing how effective learning is contingent on compelling lectures that facilitate enhanced listening and note-taking, assisting students to capture the essential points of a topic.[6,36]

It is important that students are not passive recipients of content, but rather feel they have meaningful input in live lectures and opportunities to actively participate in their learning. In the present study, students commented on the factors that promote student input, notably lecturers' use of devices such as interactive quizzes and informal competitions to promote engagement in the learning process. Communal teaching methods are known to help structure and reinforce students' learning, thereby better preparing them for assessments and exams.[8,10]

Students' remarks on the importance of 'fun' interactions such as competitions or quizzes, in their decision to attend live lectures demonstrate the role of peer discussions in effective learning. Various studies report an association between positive interpersonal relationships within student cohorts, which foster a strong sense of belonging, identity and group learning, and increased motivation to attend lectures.[43-46] Our findings are congruent with previous research, showing that opportunities for engaging social and peer interactions during live lectures were perceived by students as positive and rewarding, actively improving their reflective and self-study capabilities.[1,36,47] Similarly, the literature highlights the benefits of small group learning and tutorials, which provide a comfortable, safe forum for discussing content and asking questions, leading to higher levels of behavioural engagement.[26]

Relevance to future practice of students

Participants shared their opinions on the benefits of lectures for preparing them for exams, assessments, placements and their future careers. Regarding exam preparation, students commented that lectures provided extra content, with exams being based on the material taught in class, highlighting the importance of attending. This is consistent with previous study findings that report a positive correlation between students' exam performance and lecture attendance, particularly among later-year students.[48] Research shows that final-year students tend to adopt deeper learning approaches, which are augmented by attending lectures, while earlier years often focus on foundational knowledge and surface learning.[49] This may help explain the higher rates of lecture absenteeism among younger student cohorts. Emahiser *et al*.[6] recommend that learning sessions within health professions programmes be carefully aligned to ensure that exam-related content is thoroughly addressed in lectures, thereby encouraging students to value class time more effectively.

Students' comments on the role of lectures in preparing them for placements indicate their understanding of the importance of lecture attendance in acquiring the professional knowledge and skills needed for future practice. For example, the literature highlights that components of professionalism such as critical thinking and evidence-based practice, are best taught in the interactive environment of live lectures.[50] In health professions education, live lectures, tutorials and practical skills sessions provide essential platforms for students to learn, refine and model not only ethical behaviours and communication skills but also elements of the 'hidden curriculum' such as self-discipline, courtesy and professional socialisation'.[51-54]

Study limitations

Participants in this study were volunteers, which may have introduced social desirability bias, as they may have wanted to be viewed favourably by other participants or students. Additionally, all participants were from the same year level (third year) at one educational institution, which could contribute to geographical bias and limit the generalisability of the findings. A noted limitation of the conventional content analysis approach used in this study is the potential for an incomplete understanding of the context of the data transcripts, which may result in codes, categories and themes that do not accurately reflect the focus group data. However, several measures were taken by the researchers to ensure the trustworthiness of the findings including efforts to obtain a robust understanding and discernment of the meanings of the focus group.

Recommendations for future research

Further research is needed to determine how lectures are utilised by students in other healthcare and allied health courses. Future studies should also include students from different year levels and institutions to examine whether age and location influence perceptions of lecture effectiveness.

Conclusion and implications for teaching and practice

The findings from this pre-COVID study on how occupational therapy, pharmacy and nursing & midwifery students utilise live lectures identified

several factors that influence their attendance. These include lectures providing a comprehensive understanding of content; lecturers' creative and effective use of audio-visual aids; opportunities for positive engagement with lecturers through 'fun' interactive quizzes and informal competitions; lecturers' use of varied tone and humour when presenting difficult concepts and course content relevant to students' preparation for exams and their future careers as health professionals. The findings improve health professions educators' understanding of students' perceptions of the usefulness of live lecture attendance. Further qualitative studies involving larger cohorts of health professions students are recommended.

Declaration. None.

Acknowledgements. The authors wish to acknowledge the following fourth-year students enrolled in the Bachelor of Pharmacy (Honours) course offered in the Faculty of Pharmacy and Pharmaceutical Sciences at Monash University, Parkville Campus, for their assistance with coding the focus group transcripts as part of their Inquiry Based Project unit: Zakaria El Kadmiri El Azizi, Kai Yang Chang, Sithum Devendra, Christopher George Kyriakos, and Jungmin Lee.

Authors' contributions. The three authors are responsible for the conception, design, intellectual content and drafting the manuscript.

Funding statement. None.

Data availability statement. The datasets generated and analysed during the current study are available not available due to ethical reasons to ensure privacy and confidentiality of the study participants.

Conflict of interests. None.

1. Bati AH, Mandiracioglu A, Orgun F, Govsa F. Why do students miss lectures? A study of lecture attendance amongst students of health science. Nurse Educ Today 2013;33(6):596-601. https://doi.org/10.1016/j.nedt.2012.07.010
2. James Madison University. Help understanding the purpose of readings and lectures. 2021. https://w3.cs.jmu.edu/bernstdh/web/common/help/readings-and-lectures_understanding.php (accessed 14 June 2024).
3. Dolnicar S, Kaiser S, Matus K, Vialle W. Can Australian universities take measures to increase the lecture attendance of marketing students? J Marketing Educ 2009;31:203-211. https://doi.org/10.1177/0273475309345202
4. Moore S, Armstrong C, Pearson J. Lecture absenteeism among students in higher education: A valuable route to understanding student motivation. J Higher Educ Policy Man 2008;30:15-24. https://doi.org/10.1080/13600800701457848
5. Baderin MA. Towards improving students' attendance and quality of undergraduate tutorials: A case study on law. Teach Higher Educ 2005;10(1):99-116. https://doi.org/10.1080/1356251042000252417
6. Emahiser J, Nguyen J, Vanier C, Sadik A. Study of live lecture attendance, student perceptions and expectations. Med Sci Educ 2021;31:697-707. https://doi.org/10.1007/s40670-021-01236-8
7. Kottasz R. Reasons for students' non-attendance at lectures and tutorials: An analysis. Invest Univ Teach Learn 2005;2:5-21.
8. Sloan D, Manns H, Mellor A, Jeffries M. Factors influencing student non-attendance at formal teaching sessions. Stud Higher Educ 2020;45(11):2203-2216. https://doi.org/10.1080/03075079.2019.1599849
9. Rawlani SS, Rawlani SM, Lohe V, Bhowate R, Khubchandani MR, Chandak R. Perception of dental faculty and student regarding class attendance and final performance. J Educ Health Prom 2018;7(1):153. https://doi.org/10.4103/jehp.jehp_128_18
10. Cohn E, Johnson E. Class attendance and performance in principles of economics. Educ Econ 2006;14(2):211-233. https://doi.org/10.1080/09645290600622954
11. Gardner G, Feldman M, Santen SA, Mui P, Biskobing D. Determinants and outcomes of in-person lecture attendance in medical school. Med Sci Educ 2022;32(4):883-890. https://doi.org/10.1007/s40670-022-01581-2
12. Kirby A, McElroy B. The effect of attendance on grade for first year economics students in University College Cork. Econ Soc Rev 2003;34(3):311-326.
13. Marburger DR. Absenteeism and undergraduate exam performance. J Econ Educ 2001;32(2):99-109. https://doi.org/10.1080/00220480109595176
14. Rodgers JR. A panel-data study of the effect of student attendance on university performance. Aus J Educ 2001;45(3):284-295. https://doi.org/10.1177/000494410104500306
15. Doggrell SA. Differences between students in various programs in a biochemistry course in lecture attendance, engagement, and academic outcomes. Biochem Mol Biol Educ 2023;51(4):377-388. https://doi.org/10.1002/bmb.21729
16. Andrietti V. Does lecture attendance affect academic performance? Panel data evidence for introductory macroeconomics. Int Rev Econ Educ 2014;15:1-16. https://doi.org/10.1016/j.iree.2013.10.010
17. Mackintosh-Franklin C. An evaluation into the impact of undergraduate nursing students' classroom attendance and engagement with online tasks on overall academic achievement. Nurse Educ Today 2018;61:89-93. https://doi.org/10.1016/j.nedt.2017.11.017
18. Torenbeek M, Janseen E, Suhre C. Predicting undergraduates' academic achievement: The role of the curriculum, time investment and self-regulated learning. Stud High Educ 2013;38(9):1393-1406. https://doi.org/10.1080/03075079.2011.640996
19. Eisen DB, Schupp CW, Isseroff RR, Ibrahimi OA, Ledo L, Armstrong AW. Does class attendance matter? Results from a second-year medical school dermatology cohort study. Int J Dermatol 2015;54(7):807-816. https://doi.org/10.1111/ijd.12816
20. Kauffman CA, Derazin M, Asmar A, Kibble JD. Patterns of medical student engagement in a second-year pathophysiology course: Relationship to USMLE Step 1 performance. Adv Physiol Educ 2019;43(4):512-518. https://doi.org/10.1152/advan.00082.2019
21. Skoglund E, Fernandez J, Sherer JT, et al. Using the theory of planned behavior to evaluate factors that influence PharmD students' intention to attend lectures. Am J Pharm Educ 2020;84(5):7550. https://doi.org/10.5688/ajpe7550
22. Persky AM, Kirwin JL, Marasco CJ, May DB, Skomo ML, Kennedy KB. Classroom attendance: Factors and perceptions of students and faculty in US schools of pharmacy. Curr Pharm Teach Learn 2014;6(1):1-9. https://doi.org/10.1016/j.cptl.2013.09.014
23. Assarroudi A, Heshmati Nabavi F, Armat MR, Ebadi A, Vaismoradi M. Directed qualitative content analysis: The description and elaboration of its underpinning methods and data analysis process. J Res Nurs 2018;23(1):42-55. https://doi.org/10.1177/1744987117741667 Elo S, Kyngäs H. The qualitative content analysis process. J Adv Nurs 2008;62(1):107-115. https://doi.org/10.1111/j.1365-2648.2007.04569.x
24. Hsieh HF, Shannon SE. Three approaches to qualitative content analysis. Qual Health Res 2005;15(9):1277-1288. https://doi.org/10.1177/1049732305276687
25. Mayring P. Qualitative content analysis: Theoretical foundation, basic procedures and software solution. Klagenfurt: Monograph; 2014. http://nbn-resolving.de/urn:nbn:de:0168-ssoar-395173
26. Columbia Mailman School for Public Health. Content analysis. 2023. https://www.publichealth.columbia.edu/research/population-health-methods/content- analysis (accessed 14 June 2024).
27. Crosley J. Qualitative data coding 101: How to code qualitative data, the smart way (with examples). 2020. https://gradcoach.com/qualitative-data-coding-101/ (accessed 14 June 2024).
28. Shava GN, Hleza S, Tlou F, Shonhiwa S, Mathonsi E. Qualitative content analysis, utility, usability and processes in educational research. Int J Res Innov Soc Sci 2021;5(7):553-558.
29. Vaismoradi M, Jones J, Turunen H, Snelgrove S. Theme development in qualitative content analysis and thematic analysis. J Nurs Educ Pract 2016;6(5):100-110. http://dx.doi.org/10.5430/jnep.v6n5p100
30. Mokhtari S, Nikzad S, Mokhtari S, Sabour S, Hosseini S. Investigating the reasons for students' attendance in and absenteeism from lecture classes and educational planning to improve the situation. J Edu Health Promot 2021;10(1):221. https://doi.org/10.4103/jehp.jehp_1112_20
31. Büchele S. Evaluating the link between attendance and performance in higher education: The role of classroom engagement dimensions. Assess Eval Higher Educ 2021;46(1):132-150. https://doi.org/10.1080/02602938.2020.1754330
32. López-Bonilla JM, López-Bonilla LM. The multidimensional structure of university absenteeism: An exploratory study. Innov Educ Teaching Intern 2015;52(2):185-195. https://doi.org/10.1080/14703297.2013.847382
33. Cilliers EJ. The challenge of teaching generation Z. PEOPLE: Int J Soc Sci 2017;3:188-198. http://hdl.handle.net/10453/158991http://hdl.handle.net/10453/158991
34. Eckleberry-Hunt J, Lick D, Hunt R. Is medical education ready for generation Z? J Grad Med Educ 2018;10(4):378-381. https://doi.org/10.4300/JGME-D-18-00466.1
35. Forsgren S, Christensson T, Rudolfsson G, Rejnö Å. To attend or not: The reasoning behind nursing students' attendance at lectures: A qualitative study. Scan J Educ Res 2021;65(3):500-509. https://doi.org/10.1080/00313831.2020.1727004
36. Billings-Gagliardi S, Mazor KM. Student decisions about lecture attendance: Do electronic course materials matter? Acad Med 2007;82(10 Suppl):S73-S76. https://doi.org/10.1097/acm.0b013e31813e651e
37. Gupta A, Saks NS. Exploring medical student decisions regarding attending live lectures and using recorded lectures. Med Teach 2013;35(9):767-771. https://doi.org/10.3109/0142159X.2013.801940
38. Topale L. The strategic use of lecture recordings to facilitate an active and self-directed learning approach. BMC Med Educ 2016;16(1):201. https://doi.org/10.1186/s12909-016-0723-0
39. Paisey C, Paisey NJ. Student attendance in an accounting module: Reasons for non-attendance and the effect on academic performance at a Scottish university. Account Educ 2004;13(1):39-53. https://doi.org/10.1080/0963928042000310788
40. Woodfield R, Jessop D, McMillan L. Gender differences in undergraduate attendance rates. Stud Higher Educ 2006;31(1):1-22. https://doi.org/10.1080/03075070500340127
41. Macfarlane B. The surveillance of learning: A critical analysis of university attendance policies. Higher Educ Quart 2013;67(4):358-373. https://doi.org/10.1111/hequ.12016
42. Yeung A, Raju S, Sharma MD. Online lecture recordings and lecture attendance: Investigating student preferences in a large first year psychology course. J Learn Design 2016;9(1):55-71.
43. Levett-Jones T, Lathlean J. Belongingness: A prerequisite for nursing students' clinical learning. Nurse Educ Prac 2008;8(2):103-111. https://doi.org/10.1016/j.nepr.2007.04.003
44. Mellor D, Stokes M, Firth L, Hayashi Y, Cummins R. Need for belonging, relationship satisfaction, loneliness, and life satisfaction. Pers Individ Dif 2008;45(3):213-218. https://doi.org/10.1016/j.paid.2008.03.020
45. Shqaidef AJ, Abu-Baker D, Al-Bitar ZB, Badran S, Hamdan AM. Academic performance of dental students: A andomised trial comparing live, audio recorded and video recorded lectures. Eur J Dent Educ 2021;25:377-384. https://doi.org/10.1111/eje.12614
46. Bennett R. Determinants of undergraduate student drop-out rates in a university business studies department. J Further Higher Educ 2003;27(2):123-141. https://doi.org/10.1080/030987703200065154
47. Nordmann E, Calder C, Bishop P, Irwin A, Comber D. Turn up, tune in, don't drop out: The relationship between lecture attendance, use of lecture recordings, and achievement at different levels of study. Higher Educ 2019;77:1065-1084. https://doi.org/10.1007/s10734-018-0320-8
48. Lake W, Boyd W. Age, maturity and gender, and the propensity towards surface and deep learning approaches amongst university students. Creative Educ 2015;6(22):2361-2371. https://doi.org/10.4236/ce.2015.622242
49. Wong BM, Holmboe ES. Transforming the academic faculty perspective in graduate medical education to better align educational and clinical outcomes. Acad Med 2016;91(4):473-479. https://doi.org/10.1097/acm.0000000000001035
50. Malone D, Connell C, Hewitt A, Brown T. Understanding how pharmacy, occupational therapy and nursing-midwifery students utilise lectures as learning opportunities: A mixed methods study informing post-COVID-19 pandemic return to campus. Focus Health Prof Educ 2023;24(4):38-58.
51. Alsubaie MA. Hidden curriculum as one of current issue of curriculum. J Educ Prac 2015;6(33):125-128.
52. Neve H, Collett T. Empowering students with the hidden curriculum. Clin Teach 2018;15:494-499. https://doi.org/10.1111/tct.12736
53. Zazulia AR, Goldhoff P. Faculty and medical student attitudes about preclinical classroom attendance. Teach Learn Med 2014;26:327-334. https://doi.org/10.1080/10401334.2014.945028

Submitted 21 June 2024. Accepted 26 September 2024.