Blended learning to teach gender in medical school

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Teaching gender and sexuality in medical school is critical to prepare students for future clinical practice

SUMMARY

Background: Teaching gender and sexuality in medical school is critical to prepare students for future clinical practice. Yet curriculum gaps exist in teaching these topics in medical schools. To address this, medical schools are integrating gendered perspectives into their curricula.

Context: Acknowledging the need to teach gender and sexuality, Western Sydney University School of Medicine introduced a lecture on 'Gendered Perspectives on Health' in 2015. However, the delivery of the content took more time than anticipated, as some students lacked a basic understanding of gender and sexuality. Engagement with the didactic teaching method was low.

Innovation: Using blended learning techniques, a flipped classroom workshop on gender and sexuality was developed in 2016. The workshop had online components that gave basic information on gender and sexuality, which students viewed prior to the face-to-face session. Students then discussed specific gender-related topics with expert facilitators using a timed multi-station approach during the face-to-face session. A plenary session provided students with the opportunity to address any remaining questions. Evaluation suggests that the workshop increased the students' self-reported knowledge on gender and sexual health topics and services. Students also found the workshop useful and engaging.

Implications: The workshop provided an engaging and informative way for students to discuss gender and sexuality. The workshop also created a safe learning environment for students to clarify their perceptions of gender and sexuality. Increasing students' knowledge and understanding of gender and sexuality promoted a gender-sensitive approach to patient care, which can help students to avoid stereotyping and to provide comprehensive care to gender-diverse groups.

INTRODUCTION

Gender and sexuality warrant substantial discussion in medical education, as they play significant roles in patient management.[1] Gender and sexuality awareness is important for good clinical practice,[2,3] and for the quality of care provided,[4] particularly for people of gender and sexual minorities (non-binary and/or non-heterosexual), whose sexual and social stigma cause distinct health care disparities.[5] Gender- and sexuality-related bias and discomfort affect sexual history-taking, safe-sex counselling and the care provided by doctors, and therefore affect patients' health outcomes.[4] Studies have found curriculum gaps in the teaching provided on gender and sexuality in medical schools, particularly regarding the gender spectrum, transgender health and violence, causing inadequate preparedness for future practice.[1,3] Furthermore, students who identify as sexual and gender minorities reported unsafe environments in medical schools that caused them to fear discrimination.[6,7] Such environments further isolate these students and force them to remain 'in the closet', which has negative effects on their physical and emotional well-being.[6,7]

Better teaching of gender-related topics in medical curricula is critical to increase the students' understanding of these topics, which can improve their future clinical practice and the health outcomes for people of different genders and sexual identities. Additionally, students can be provided with a safe learning environment to discuss these topics and clarify doubts. Acknowledging the significance of gender education, many Australian medical schools have integrated gendered perspectives into their medical curricula.[2,8] This report outlines lessons learned from an innovation to teach gender and sexuality at the Western Sydney University School of Medicine.

CONTEXT

Gender and sexuality is embedded across the 5-year undergraduate Bachelor of Medicine, Bachelor of Surgery (MBBS) curriculum at Western Sydney University. The MBBS is one of two primary medical qualifications in Australia (the other being Doctor of Medicine, MD). In 2015 a new 2-hour lecture on 'Gendered Perspectives on Health' was delivered face to face to third-year students (in their first clinical year). Most students came directly from high school and their median age was 22 years. The lecture was designed to be interactive with case studies. However, the discussion of basic concepts of gender and sexuality took much longer because of the students' lack of prior knowledge. The case studies could not be discussed, and students became disengaged. In 2016 the lecture was revised using a flipped classroom and a blended learning approach. Key elements of the flipped classroom model were that students gained basic information on gender and sexuality online, followed by a face-to-face session for in-depth guided case discussions with peers based on the online content.[9] The flipped classroom strategy was chosen because it promotes students learning of lower level cognitive understanding[10] outside of, and prior to the face-to-face discussion.[9] Students then focus on higher-order cognitive skills in class with support from their classmates and educators.[11] The Western Sydney University Human Research Ethics Committee approved the workshop evaluation (H9989).

INNOVATION

Resource development and implementation

The flipped classroom development started with formulating learning objectives (Table 1). These learning objectives were based on the overarching learning outcomes of the Medicine in Context programme, which is the umbrella programme for the workshop. Students will be able to: (i) review how social determinants of health contribute to health outcomes of individuals and communities; and (ii) analyse roles of community-based services in supporting the health and well-being of individuals and communities. The online components included four mini-lecture screencasts (of 5–8 minutes in length) to be viewed prior to a 2-hour face-to-face session. Screencast topics included an overview of gender and sexual identity, gender-based epidemiology, gender as a social determinant of health and addressing gender in health care settings. Screencasts were created using Zoom® and enabled students to learn at their own pace, providing a student-centred learning experience.[12] In addition, three health practitioners shared their experiences of domestic violence, transgender health and working with gender-diverse people in short videos (of 3–4 minutes in length). The screencasts and videos were provided via the e-learning system of the university (Blackboard™), and the students' access was tracked. The team also developed a detailed facilitator guide, discussion questions, evaluation form and a list of gender-related services to support the workshop (Table 1).

Drawing on the screencasts, five face-to-face stations addressed specific gender-related issues using short video clips and discussion questions. Station topics included: men's, women's and transgender health; contact tracing for sexually transmitted infections; and gender and sexuality stereotypes (session plan, Table 1). Open-access documentaries and popular video clips were chosen to maximise engagement. Students were divided into five groups that rotated through the stations

Gender and sexuality awareness is important for good clinical practice

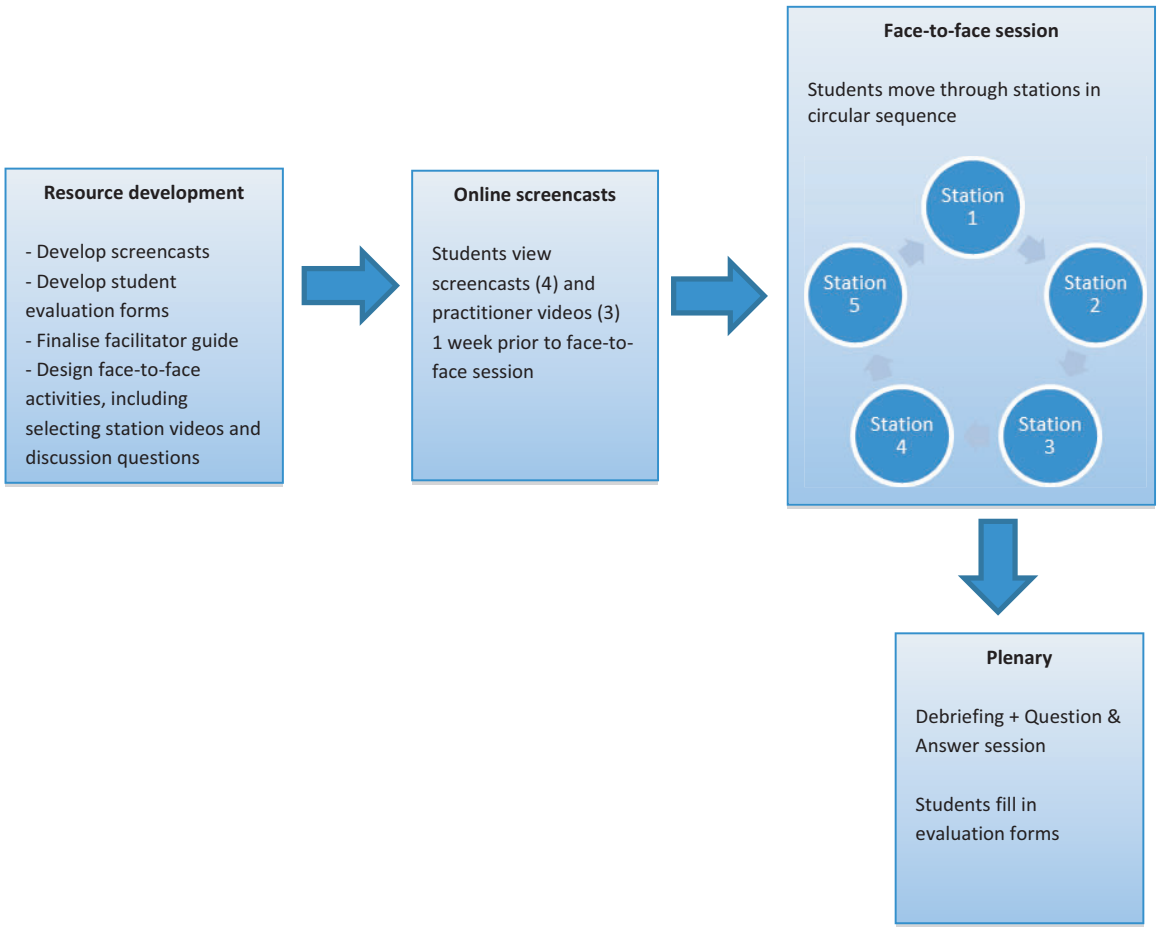
Open-access documentaries and popular video clips were chosen to maximise engagement

Table 1. 'Gendered Perspectives on Health' flipped classroom model

Learning objectives	By the end of this workshop, students will be able to: • evaluate the role of gender as a social determinant of health; • discuss how the spectrum of gender identity impacts on health status, risk factors and service delivery; • explain how medical professionals can apply a gendered perspective on health in clinical practice; • explain the challenges in providing sexual health services; • assess the role of community-based services and General Practice in gender- and sex-related health issues
Online content	Screencasts (4) and videos (3)
Face-to-face session structure	• Introduction (5 minutes) • Divide students into five groups. Each group starts at one station and sequentially moves to the other stations every 12 minutes (for a total of 60 minutes) **Station 1: Men's health & health-seeking behaviour** Facilitator: a community worker who works with men's groups and researches social construction of gender **Station 2: Women's health & domestic violence** Facilitator: a community worker with extensive experience working with female survivors of domestic violence **Station 3: Transgender health** Facilitator: a researcher on transgender health **Station 4: Gender and sexuality stereotypes** Facilitator: an academic with experience working with and conducting research with gender-diverse groups **Station 5: Managing sexually transmitted infections (STIs)** Facilitator: a General Practitioner with expertise in STI management • Plenary debriefing, question & answer and take-home messages (40 minutes) • Evaluation (5 minutes)
Student handouts	Discussion questions for each station
Room allocation sheets	Table showing room allocation for each station
Student evaluation	Evaluation forms seeking quantitative and qualitative feedback
Facilitator Guide	Learning outcomes, required materials, face-to-face session plan, links to clips for each station, student handouts, evaluation form
Additional student resources	Local gender-related health and community services

every 12 minutes discussing key questions, facilitated by an expert practitioner or researcher at each station. In a plenary, each facilitator recapped key points from student discussions and answered any remaining questions (Figure 1). There was no post-workshop assessment, only an evaluation; however, the online and face-to-face workshop contents were included in the written exams at the end of the year.

The teaching team consisted of: the authors, who have experience in research and teaching on gender and sexuality and are members of the gender-and sexuality-diverse support network of the university; four facilitators with experience working with or conducting research with gender- and sexuality-diverse people (Table 1); and three practitioners who provided key video messages. Two team members identified as sexuality-diverse. A teaching plan and resources were designed and developed by the authors after discussions with all team members about pertinent challenges they found in their work, the literature relevant to their service or research, and personal experiences.



'The topics of each [station] were very engaging and very relevant to our own clinical practice'

Figure 1. Flipped classroom workshop development and implementation

The feedback from the facilitators on the initial drafts was incorporated to finalise the workshop plan.

The workshop was conducted for all third year students (121), divided into four sub-cohorts throughout 2016. Screencast viewership ranged from 49 to 74% (from 59/121 to 89/121); 26% students (32/121) did not watch any screencast. Ninety-four percent of the cohort (114/121) attended the face-to-face sessions.

Evaluation

At the end of the face-to-face sessions, students answered an anonymous questionnaire to self-report their knowledge on gender and sexual health, and services for women's, men's and sexual health before and after the workshop. Students also noted the best features of the workshop and provided suggestions for improvements. The response rate was 90% (103/114). Self-reported knowledge scores (on a scale of 0–10) for each topic were analysed using the paired Student's *t*-test (Microsoft EXCEL 2010®; $\alpha = 0.05$). Differences in before-and-after scores for each student were calculated and averaged (Table 2). Statistically significant knowledge improvements were found for all topics.

Inductive thematic analysis[13] of the students' open-ended answers revealed three best aspects of the workshop and three aspects to improve (Table 3). The best features of the workshop were: utility of content, engaging structure and level of discussion. The workshop was an engaging learning experience, relevant to future clinical practice, and most students enjoyed the multi-station style. Suggestions for improvement were: involving more gender- and sexuality-diverse facilitators, increasing time at each station and removing the plenary. A few students found the content too basic, but others struggled to grasp concepts such as gender fluidity.

The teaching team's informal debriefing sessions revealed that some students discussed people that they personally knew who had different sexual identities or were transitioning their gender. By bringing the discussion to a personal level, these students voiced their own feelings about gender and sexuality, and provided critical reflection points for their peers. The teaching team did not identify any prejudices that may affect the students' future practice.

IMPLICATIONS

An engaging, informative teaching session was developed to discuss gender and

The multi-station approach provided students with opportunities to affirm their learning with experts in a safe learning environment

Table 2. Students' self-reported knowledge before and after attending the flipped classroom

Students' self-reported knowledge	Average score before the session	Average score after the session	Average increase of scores	*P*	*t*-statistic	d.f.
Knowledge about gender and sexual health issues	6.3	8.2	1.9	<0.001	−12.3	102
Knowledge about women's health services	5.7	7.6	1.9	<0.001	−12.4	102
Knowledge about men's health services	4.4	6.9	2.5	<0.001	−11.5	102
Knowledge about sexual health services	5.8	7.6	1.8	<0.001	−10.4	101

sexuality through a flipped classroom workshop, using online screencasts and face-to-face multi-station discussions. The screencasts brought the whole class to the same starting point, which was a limitation identified in the previous didactic approach. However, creating engagement with online components prior to the face-to-face session proved difficult. Students' lack of basic knowledge hindered their full participation in discussions and made it difficult to appropriately pitch the case discussions. The workshop was only the second time in the MBBS course that students experienced a flipped classroom, and incorrect assumptions about the length of screencasts may have demotivated students from viewing. Students who did not regularly check their e-mails may have missed the instructions to watch the screencasts in time. Learning from this experience, the teaching team plan to highlight the brevity of the screencasts and introduce the flipped classroom approach during orientations to familiarise students with the flipped teaching process.

Table 3. Thematic analysis of the best features of the flipped classroom and suggestions for improvement, with examples

Theme	Examples of student feedback for best features
Best features	
Utility of content	'The topics of each [station] were very engaging and very relevant to our own clinical practice' 'Was really informative and eye-opening!'
Engaging structure	'The multi-station approach makes it more engaging and interactive' 'The stations were very engaging (videos are great!) and interesting'
Level of discussion	'Discussing different issues, variety, encouraging thinking' 'The open discussions elicited by the video scenarios'
Suggestions for improvement	
Involving more gender- and sexuality-diverse people	'Representative – e.g. member of the LGBTI community to speak to us about what they want us to focus on learning to be health professionals' 'Bring people who are not typical gender roles to ask questions to'
Increasing time at each station	'Longer station time – more discussion would be great!' 'Longer stations! Some of them were too short!'
Removing the plenary session	'Don't believe plenary sessions are necessary' 'The meeting back in the room after the stations was a waste of time'

The multi-station approach provided students with opportunities to affirm their learning with experts in a safe learning environment, reflected by the students' openness in sharing personal stories. Students clarified their own and popular perceptions of gender and sexuality, thereby demystifying gender and sexuality in medical school.[1,12] Such safe environments would be particularly

beneficial for students who may have unresolved feelings about their own gender or sexual identities.[7]

This flipped classroom workshop promoted a gender-sensitive approach to students' future clinical practice by increasing students' knowledge of gender, sexuality, and working with people of different genders and sexual orientations (including patients and colleagues). The workshop also encouraged students to view gender and sexuality as important factors in patient care. Knowledge of diverse gender and sexual identities can help students avoid stereotyping patients. In addition, students' awareness and openness to discuss a patient's gender identity and sexual orientation can contribute to providing comprehensive health care as clinicians, particularly for people of gender and sexual minorities who have unique health care needs.

Limitations

The teaching team's limited time and resources led to the use of self-reported knowledge to evaluate student learning. Self-reported knowledge is not the best indicator of student learning, and students may over- or under-estimate their knowledge increase. The third year assessment blueprint prohibited the inclusion of a meaningful number of gender-related exam questions for a separate analysis, thereby hindering the verification of student learning from other data sources. The team is exploring better strategies to evaluate whether the workshop learning objectives are achieved.

This flipped classroom workshop promoted a gender-sensitive approach to students' future clinical practice

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Ethical approval: Ethics approval was obtained from the Western Sydney University Human Research Ethics Committee, ID no. H9989. Students were fully informed of the study and ways in which their responses would be used, including intent to publish. Students were given evaluation questionnaires to provide anonymous feedback. No identifying student details were requested in order to preserve the students' anonymity. Students were given the choice to complete the questionnaire or decline, and were told that participation or non-participation would not affect their assessment results or progression in the programme. Students were informed that submission of completed questionnaires was an indication of consent to use the data for research purposes. The evaluation was considered low risk, and there was no foreseeable harm to students as a result of their participation.

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