

## Elements of a safe learning environment: A student perspective

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**Background.** There is evidence that any learning experience should happen in a safe learning environment as students interact, experiment and construct new knowledge. It is therefore important to investigate a learning environment from student perspectives on what elements will make them feel safe.

**Objective.** This study aimed to identify the elements contributing to a safe learning environment for millennial optometry students.

**Methods.** An intrinsic qualitative case study was undertaken with undergraduate optometry students from the University of the Free State, South Africa ( $N=68$ ). An open-ended questionnaire was completed after applying nine different teaching-learning methods based on Kolb's experiential learning cycle. To supplement the data, two focus group interviews ( $N=17$ ) were also conducted.

**Results.** The response rate to the questionnaire was 99.42%, and 15 students participated in the focus group interviews. Students feel safe in an environment where they are familiar with each other, the educators and the surroundings. Peer learning also creates a safe and familiar environment. These elements create an environment where they feel safe to ask questions. Students value an environment where they can learn without influencing their marks or disadvantaging patients. They enjoy learning from their peers but also need personal contact with educators. Elements such as consistency and an achievable objective have also been identified.

**Conclusion.** The study findings suggest that to respond to the real learning environment needs of students, insights must be gained into their experiences and perceptions, thereby identifying their needs and suitable learning environment to optimise learning pedagogies.

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Kolb argues that learning based on experience is fundamental to how humans learn and develop.<sup>[1]</sup> De Oliveira *et al.*<sup>[2]</sup> relate to this statement, stating that experience is essential for learning and professional development in health sciences education. Students prefer experiential learning, and this type of pedagogy is popular among students.<sup>[3]</sup> Millennial, or Y-generation, students (born in the period 1981 - 2000) are especially attracted to this type of learning.<sup>[4]</sup>

Experiential learning allows students to apply information directly so as to be self-efficient and learn from the experience. This pedagogy is effective in increasing students' awareness of their knowledge, using it in actual situations, and the ability to understand, control and manipulate their cognitive processes to become self-directed learners.<sup>[5]</sup> Fowler posits that experiential learning has the potential to result in self-growth.<sup>[6]</sup> This self-growth ranges from an individual to communities and includes professional, personal and academic education. Therefore, the learning environment where experiential learning is applied must be conducive towards the experience leading to growth.

A learning environment 'encompasses the physical, social and psychological context in which students learn; all interactions with faculty, staff, and peers; and the formal, informal, and hidden curricula'[p 246].<sup>[7]</sup> It is important to investigate a learning environment as it is a significant contributing factor to student behaviour, success and satisfaction and overall development of the student.<sup>[8,9]</sup> With the application of any pedagogical framework, it is vital to create a learning environment that respects, supports and empowers students to overcome fear and take determined action toward mastery.<sup>[10]</sup> It is unclear what elements should be present for millennial generation optometry students to feel safe in their learning environment. The literature provides research on safe learning

environments, but students' perspectives on what specifically creates a safe learning environment are under-researched.<sup>[8]</sup> The present study aimed to uncover the key elements contributing to a safe learning environment by exploring optometry students' experiences and perceptions about teaching-learning methods based on experiential learning.

### Context

This study focused on several pathology modules in the optometry programme the University of the Free State (UFS), South Africa. In the pre-clinical years (first and second year) of the four-year optometry programme, the focus of these modules is to establish a foundation of knowledge, and the delivery mode is mainly via lectures and small-group work. During the third year, students have a practical module in which they learn clinical skills. In the final year, students rotate weekly in the Pathology Clinic, where patients referred from the General Clinic with possible pathology are seen. As two major categories of experiential learning exist, namely field-based experiences and classroom-based learning,<sup>[11]</sup> the present study concentrated on classroom-based learning. Schwartz explains that experiential learning within a classroom setting can manifest in various formats, encompassing role-playing, interactive games, case studies, simulations, presentations and diverse collaborative group activities.<sup>[11]</sup> The teaching-learning methods included in this study were designed with Kolb's learning cycle in mind and placed on a continuum from theoretical (lectures) to applied (clinical). Methods included traditional lectures (presentations), flipped classroom, small-group learning, bedside teaching, simulation, interprofessional education (IPE), case presentation, peer assessments and clinical and clinical skills training.

## Methods

### Ethics

The protocol for the study was approved by the Health Sciences Research Ethics Committee (HSREC) of the University of the Free State (HSREC No. 128/2016). Written informed consent was obtained from participants by the primary author.

### Research design

An intrinsic qualitative case study was undertaken. The intrinsic case study, with the emphasis placed on describing the particulars of a case rather than making generalisations, is prevalent in educational research and was used in this study.<sup>[12]</sup>

### Sample

Sample selection was applied for the questionnaire survey and focus group interviews. For the questionnaire survey, the study population included all students enrolled in their second, third and fourth year (Table 1) in the undergraduate optometry programme during 2017 ( $N=68$ ).

At the time of the study, the Optometry Department offered no pathology modules in the first year of the degree. The final, fourth-year, students ( $N=17$ ) who completed the Pathology Clinic were invited to participate in a focus group aimed at identifying the most valuable aspects of their clinical experiences.

### Data collection

#### Questionnaire

An open-ended questionnaire was designed. The decision to use a questionnaire was made by considering the data collection method to create an opportunity to reflect and allow participants to respond in their own words on each teaching-learning method. For this reason, the questionnaire was designed to encourage students to engage in reflective practice. It consisted of eight questions adapted from the existing literature on Gibbs's cycle of reflection for this study.<sup>[13](Addendum A)</sup> The questionnaires were administered during different academic contact sessions during the first semester of 2017. After each teaching-learning method was employed during the contact session, students completed the questionnaire.

#### Focus group discussions

The focus group discussions were included to provide additional data to contribute to interpreting and confirming the data obtained from the questionnaire survey. Common themes from the questionnaires were identified and used to formulate an agenda, questions and specific areas of interest for the focus group discussions. The topics discussed in the focus groups included factors that contributed to a safe learning environment, experience and perceptions on the ability to integrate knowledge, thoughts on the assessment of competence, and recommendations to enhance the clinical experience. Probing questions were used to promote a dynamic flow and active participation (Addendum B of the agenda for the focus group)

**Table 1. Numbers of second- to fourth-year undergraduate students registered at the Department of Optometry, 2017, UFS**

Year of study/academic year	II	III	IV	Total
Number of students	20	31	17	68

Two focus group discussions were held at a convenient time in the second semester of 2017 after completing the Pathology Clinics. The focus group facilitator was familiar to the participants but not personally involved in the research or the Department of Optometry. The discussions were conducted in Afrikaans, according to participants' preferences, and recorded using a digital voice recorder. The first focus group interview was 82 minutes, and the second was 70 minutes. Discussion occurred in a familiar but neutral setting for all participants. The researcher transcribed the recorded discussions, which were translated into English by an independent language editor.

### Data analysis

An inductive approach was followed as the categories were identified through content analysis. This was done by interacting with the data while discovering patterns, themes and categories.<sup>[14,15]</sup> The first author repeatedly examined written answers from the questionnaire and transcripts from focus group interviews and aimed the analysis at searching through the data for recurring words or themes to identify key elements for a safe experiential learning environment.<sup>[16]</sup> An independent co-worker checked the groupings and categories to ensure accuracy.

To ensure the credibility of the study, a variety of data were collected from different perspectives to ensure triangulation and sufficient detailed data to create an extensive understanding of the study topic.<sup>[17]</sup> With the use of triangulation, the data were confirmed and their completion ensured.<sup>[18]</sup>

## Results

The study explored participants' experiences and perceptions via the questionnaire and focus group discussions. Table 2 represents the response rate for the nine teaching-learning methods used. The questionnaire was completed on separate occasions by each year group as they were exposed to the specific teaching-learning method. After the nine teaching-learning methods (Table 2) had been utilised during the contact sessions, 307 questionnaires were completed.

All fourth-year students (17) were invited to the interviews. Two students who had confirmed their availability did not arrive on the scheduled day for the second focus group interview owing to illness. Therefore, the number of participating students for the first focus group was nine and six for the second. The participants also were allowed to indicate in which focus group they wanted to participate, and it may be assumed that they chose to be with the peers with whom they felt most comfortable. This was done to ensure optimal participation by each participant.

Although the data analysis of the questionnaire and the focus group discussions was conducted as separate components, the themes that emerged from both data sources were triangulated. Interrogation of the data relating to perceptions of feeling safe in the learning environment led to the emergence of six themes (Box 1).

### Familiarity

Familiar teaching-learning methods, such as a lecture, did not create any anxiety for participants in this study. One participant expressed the following:

I felt at ease, as this method of teaching is used for most of our lectures.  
[Participant 3, second year, lecture]

This feeling was confirmed during the focus group discussion when it was mentioned that being familiar with the environment and with the supervisors made them feel safe.

**Table 2. Response rate of second- to fourth-year undergraduate optometry students who completed the questionnaire**

Teaching-learning method	Year group involved	Response rate, n (%)
Traditional lectures	Second year	20 (100%)
	Fourth year	17 (100%)
Flipped classroom	Second year	20 (100%)
	Third year	31 (100%)
	Fourth year	16 (94.11%)
Small-group work learning	Second year	20 (100%)
Simulation	Fourth year	17 (100%)
Interprofessional education (IPE)	Fourth year	17 (100%)
Case presentation	Presenters – fourth year	17 (100%)
	Audience – second, third and fourth years	67 (98.52%)
Peer assessment	Fourth year	17 (100%)
Bedside teaching	Fourth year	17 (100%)
Clinical skills training	Third year	31 (100%)
<b>Total number of completions</b>		<b>307 (99.42%)</b>

### Box 1. Summary of themes

**Familiarity.** Feeling safe when familiar with the teaching-learning method, learning environment, peers and a same-level student-educator relationship.

**Peer learning.** Learning with and from peers builds confidence.

Face-to-face availability of educator. Provide an opportunity to obtain immediate answers/clarification from a familiar, trusted authority.

**Learning without risks.** Reduced anxiety when not responsible for diagnosis and management of patients or learning activities being assessed for marks.

**Consistency.** Feedback and responses from different educators should be the same.

**Achievable objective.** Learning objectives and expectations should be well communicated.

And everyone knows everyone, like the lecturers that are there that help us, we know them, if there's someone from outside, we know them as well, we've seen them somewhere already and so. [Participant 7, FGD 1]

Within this familiarity, when talking about the relationship with the educator, they want to feel they are on the same level as the educator.

I want to feel comfortable that when I go to someone, I can even ask them, 'Listen here, how is your family or whatever?' ... [laughter] ... Trying to be more on the same level [Participant 6, FGD 1]

They also felt safe around an educator when they were allowed to learn with them.

They make it really safe ... the lecturers often made me feel that they're not going to pretend to be so clever or try to be kind of better than you and that when they also don't know, they acknowledge it and we go back to the textbook and check. [Participant 1, FGD 1]

### Peer learning

Data from the present study confirmed that participants felt safe exploring among their peers in a small group. The following quotation confirms this:

Small group learning ... builds confidence, encourages team spirit, dependence on one another, building relationships. [Participant 1, second year, flipped classroom]

Also, students felt familiar with their peers and comfortable asking questions or assisting when embarrassed to ask the supervisor.

I've learned more by asking help from my friend and seeing what we each struggled with. We have different strengths, so we use our unique set of strengths to improve each other's knowledge. [Participant 15, third year, peer assessment]

A participant in the focus group confirmed this by mentioning:

You learn better from your peers or from your fellow students than you learn from a, umm, a lecturer actually. [Participant 2, FGD 1]

It was evident that when the group of students became bigger, negative feelings were expressed, as this participant felt during a large group learning activity:

I was irritated and felt that there were too many people at once, and it made me feel anxious. [Participant 16, fourth year, IPE]

### Face-to-face availability of educators

Throughout the data, students mentioned that the lecturers/supervisors were available, and they could ask questions when they felt uncertain or needed (immediate) clarification. The verbatim quotations below confirm this:

If I had a question about something, I could immediately get answers while talking about the specific section I had a question about. [Participant, fourth year, lecture]

I'll say it was a safe learning environment. We could safely ask questions at any time during the clinic [when] we had a question or felt uncertain about anything. [Participant 5, FGD 2]

### Learning without risks

The participants perceived an environment without risks where learning could occur without having to bear the responsibility of making a diagnosis and managing a patient. As a participant in the focus group explained:

... there is an ophthalmologist ... he finalises our diagnosis if you are correct or wrong, you know, like someone who really knows had a look at it, so you feel safe. [Participant 8, FGD 1]

This is also true for when they go through a learning experience without

being assessed, as this participant mentioned for the simulation experience, which was an overwhelmingly positive experience:

It tested me without feeling like a test, therefore it let me realise with what I struggle and with what I am good at. [Participant 6, fourth year, simulation]

Like the simulation, feelings during the peer assessment teaching-learning method were only positive. Students found it conducive for self-improvement, and it was not factored into their semester grading.

## Consistency

Participants felt unsafe and uncertain in inconsistent environments. One of the challenges that was raised that created an unsafe clinical learning environment was that participants felt inconsistencies among the supervisors. Participants used statements such as 'They were not all on the same wavelength.' and 'They are not on the same page.'

It sometimes made me feel uncertain in specific cases, because then you don't know, according to the lecturer you must do it, according to another lecturer you must not do it and then you don't really know where to draw your centre line so that you can keep both happy. [Participant 3, FGD 1]

## Achievable objectives

Students participating in the present study reported feelings of nervousness, uncertainty and confusion when they perceived the learning objective as unclear, inappropriate or unrealistic. During the focus group interviews, participants strongly agreed that the expectations which the educators initially had of them in the clinical environment were too high, and they stressed (as one participant mentioned) 'It's not nice to be thrown into the deep end.' [Participant 9, FGD 1] This resulted in students doubting their abilities and feeling that they were left without support and unduly cut down to size.

## Discussion

Participants seemed safer and more comfortable when there was familiarity in the learning environment. This was true for the teaching-learning method, educators and their peers. Unfamiliar teaching-learning methods, such as the flipped classroom, simulation and bedside teaching, created negativity at the beginning of the experience. Nevertheless, owing to the activities being carried out in a familiar environment under the guidance of a familiar lecturer, their feelings at the end of the experience changed overwhelmingly to a positive experience. Participants felt comfortable asking questions when the educator was approachable and in a supportive environment where they were familiar with and worked in a small group. They also felt safe in an environment where they experienced humane pedagogies that encouraged empathy and familiarity in educators. This atmosphere aligns with the literature, describing the most important aspect of a safe learning environment as the student-educator relationship.<sup>[9]</sup> In the present study, participants desired parity within the student-educator relationship. We believe that educators should be cautious about being too personal or familiar with students owing to the different roles that educators must adopt.<sup>[10]</sup> In the present study, it was also noted that during the clinical training experience, participants who had a bad experience during the assessment quickly blamed supervisors involved in the module. This tendency aligns with the conceptual metaphor described by Rees *et al.*, who characterised the assessment relationship as a form of conflict, wherein

the relationship between assessors (educators) and students was perceived as oppositional.<sup>[19]</sup>

The present study confirmed that the primary purpose of small-group learning is to generate interaction among students.<sup>[20]</sup> During small-group interaction, different viewpoints are expressed – something that the study participants valued – which is in line with the preference of the group-orientated millennial student population.<sup>[4]</sup> The study participants were used to a small group owing to the small number of students in the class. However, when they were exposed to working with a large group of students during the IPE experience, this caused anxiety and even irritation for some students. Group size should also be considered when a learning activity involves public speaking, such as a presentation. It was evident throughout the data that the anxiety that some students experienced when speaking in front of a large group of students overshadowed the positive side of the learning opportunity. Initially, students should be afforded opportunities for presentations in smaller groups as a scaffolding approach.

Working and learning together in a team also created a safe learning environment, as the responsibility was shared. Students felt safe when they learned from each other because they were at the same academic level. They also felt empathy with each other, and participants in the study noted that they were more comfortable when studying or working with peers; they trusted them. They would ask peers rather than lecturers for assistance when unsure about the theory they had to master or the clinical or skills training. During case presentations, students mentioned respecting each other's work and efforts. It has been found that the active participation of peers substantially enhances the academic performance of health sciences students,<sup>[21]</sup> but it has not been successfully adopted in this setting. Data from the focus group interviews indicate that fourth-year students might feel more capable of assisting peers. It would increase their sense of achievement if they could assist in the teaching process. Rotating with a fourth-year student in the clinic will be helpful for participants to get to know the flow of the clinic and become more familiar with the clinical environment. It will also create an opportunity for students to learn with peers in small groups without risks, something they seem to enjoy.

Although students value learning from each other, they still require confirmation and reassurance from an educator. Participants in this study mentioned a few times that they preferred and valued personal contact, interaction with, and explanations from a lecturer they knew. With personal interaction, lecturers can provide immediate clarification on uncertainties, something that the millennial generation demands. Participants have also requested personal contact during the online element of the flipped classroom approach and during the clinical skills training experience. It might be that online and standardised videos take different approaches to a technique. It is evident from the data that students prefer to observe the demonstration done by someone they feel comfortable or are familiar with and who is available immediately to answer questions and clear up uncertainties.

Participants in the present study also referred to a safe learning environment as an environment where students are allowed to make mistakes and learn from their mistakes without being adversely affected by marks or the anxiety of making the wrong diagnosis. This was true for the simulation experience and the bedside teaching (apprenticeship) experience, which is congruent with previous studies which mentioned that simulation reduces students' anxiety about causing harm.<sup>[8]</sup> However, Young *et al.* cautioned that when students limit their involvement and

hesitate to take responsibility for decisions in patient care during clinical situations owing to concerns about potential harm, they may inadvertently restrict their development of clinical reasoning and judgment.<sup>[8]</sup> Participants also articulated the need for consistency between theoretical instruction and clinical application. They conveyed feelings of uncertainty when their clinical supervisor required them to conduct a test in a manner different from what they had been taught. It has been recommended that educators should not be inconsistent in their responses owing to the unpredictability of the clinical environment. They also felt challenged by the fact that each student saw a different type of patient. It might be true that when a student must see a patient who is not co-operative, it may affect their stress levels. However, they should still be able to handle the examination and focus on following the framework of the approach to the patient and going through the learning experience, and not focusing on just achieving a number.

It is important to remember that Kolb's view explained that learning is best conceived as a process in which students are allowed to engage in the learning process and not concentrate on outcomes. The data indicated that participants of this study focused primarily on the learning outcome. They felt unsafe and anxious when they perceived it as unachievable or not clearly explained. This contrasts with Prashanti and Ramnarayan, who believe that a maxim for a safe learning environment includes high expectations that will boost student performance and morale.<sup>[9]</sup> The participants of the present study did not support this idea. During the IPE sessions, case presentations (attendance) and bedside teaching, students focused only on the product, not the processes followed to attain the objective. Such an approach left them feeling disappointed in the case of bedside teaching and overwhelmed in the case of case presentations.

## Conclusion

The teaching-learning methods in this study were designed on Kolb's experiential learning cycle to provide students with active learning experiences. The present study examined this learning environment through the eyes of students to identify the key elements that instil a sense of safety. From optometry students' perspective, a safe learning environment allows students to feel familiar with the teaching-learning method and their peers, as well as perceiving equality in the student-educator relationship. They experience a sense of safety when they know what is expected from them and feel equipped to achieve the learning objectives. In this way, a safe learning environment enables peer interaction in a small group, learning opportunities without risk and a readily available, supportive educator who immediately clarifies uncertainties. In addition, consistency in feedback and

responses from various educators further enhances the overall safety and efficacy of the learning experience.

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