

Student Corner: A Tool for First-year Medical Students to Boost Active Learning

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Abstract

Introduction: During the COVID-19 pandemic, the major drawback of online teaching was the lack of interest and interaction among first-time medical students. The idea of a student corner board was developed during the COVID pandemic when fake news spread on social media about COVID. Few students were inquisitive about the real or fake news, and more active learners diverted them into a systematic literature search and submitted small writings about it.

Methods: The activity was introduced to 50 first-year medical students, each group mentored by a faculty member. Students selected topics related to the physiological basis of myths in disease prevention or treatment. Students submitted 300-word drafts under the headings of title, content, resources, and student details, which were displayed on the departmental Student Corner board and the online learning platform. A structured questionnaire was used to obtain anonymous feedback on whether the activity enhanced learning interest and engagement.

Results: Anonymous feedback in the form of a questionnaire was obtained from all 50 students to assess their interests and learning experiences during the activity. About 45% stated it always created topic awareness, while 53% said it fostered curiosity in physiology. Self-directed learning was promoted in 39% (always) and 27% (often) of participants, and 45% reported enhanced critical thinking. Standard databases such as Scopus, PubMed, and Google Scholar were frequently used (72%), and 67% enjoyed the activity. Medical journals (63%) and textbooks (27%) were the main information sources.

Conclusion: The Student Corner activity was found to be effective in enhancing curiosity, self-directed learning, and critical thinking among students.

Keywords: Critical thinking, Writing skills, Cognition, Constructivism

Introduction

A major setback following the COVID-19 pandemic striking India was the challenge in continuation of teaching and learning among medical students.

After the announcement of the lockdown in March 2020, students stayed in their houses and the online teaching was adopted to continue medical education. The biggest disadvantage of the online mode of teaching was limited scope for student-teacher interaction. Tools to enhance student interaction, such as quizzes, polls, and group discussions using break-out rooms via online platforms, were explored. We decided to promote active learning, student-facilitator interaction, and self-directed learning with involvement of students in the student's corner activity, which was considered useful for improving cognition and constructivist behavior among students. Cognition means acquiring knowledge, understanding concepts, critical

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thinking ability, problem-solving capacity, language, memory, and processing of information. Constructivism means the promotion of learning as an active process in which new information is built on the foundation of existing knowledge (Jia, 2010). Hence, the student corner activity was developed as a tool to promote active learning, critical thinking, literature search, and writing skills among first-year medical students.

Methods

This observational cross-sectional study was conducted in the Physiology department of Mahatma Gandhi Medical College and Research Institute, Puducherry, India. The Student Corner activity was introduced during the online class for all students to create interest in the physiology subject. Online consent was obtained from the students who wished to participate. Fifty first-year students who were interested in the activity were divided into five groups of ten students each,

with one moderator assigned to each group. Students were assigned the task of preparing a small write-up of not included in the core curriculum, such as finding the physiological basis of myths in preventing or treating a disease, exploring new concepts in clinical diseases, and highlighting recent Nobel Prize recipients and their research.

Students, with the help of a faculty moderator, were instructed to explore the rationale behind adopting these principles and to connect them to concepts in human physiology. They were instructed to submit their draft under the following subtitles: title, content, resources, and student details, to be displayed on the notice board. The edited drafts reviewed by the moderator were displayed in the institute's learning management system (LMS - Ganesa Canvas) for other students to view and learn. Post-pandemic, this practice is continued, and the contents are displayed on a dedicated notice board (student corner board). Additional benefits of this activity were the promotion of critical reflection, literature search, and writing skills among medical students.

A ten-item anonymous feedback questionnaire with a five-point Frequency-Likert scale was presented to all participants to collect information about their learning process, critical thinking, literature search, and writing skills. The questionnaire was validated by expert department members. Following modifications to language, sentence formation, and sequential order of the questions, the finalized questionnaire was converted to a Google form and circulated to WhatsApp groups and emails. Data were collected and expressed in percentages.

Results

All 50 students completed the feedback questionnaire related to the Student's Corner board activity. Most respondents reported a positive perception of the activity.

- Awareness and learning interest: Nearly half of the students (45%) indicated that the activity always created awareness of the topic, while 33% reported often, and 22% reported sometimes.
- Self-directed learning: About 39% stated that the activity always promoted self-directed learning, with 27% often, and 34% sometimes.
- Critical thinking: 45% always felt the activity helped them acquire logical and analytical skills, 27% often, and 28% sometimes.
- Promoting curiosity to learn more about physiology: 53% of the students felt it always promoted curiosity to learn more physiology topics, while 30% responded often. 17% expressed sometimes.
- Scientific writing skills: A strong majority (89%) reported that the activity always improved their scientific writing skills, while 11% reported often.
- Use of academic resources: For content collection, 44% reported always using standard academic databases such as Scopus, PubMed, and Google Scholar, while 28% reported often, 11% sometimes, and 17% rarely.

- Perceived benefit and motivation: 44% of students felt the new information was always beneficial, while 28% often and 28% sometimes considered it useful.
 - Enjoyment was high, with 67% indicating they always enjoyed participating, and 23% reporting often. Motivation to take part in similar activities was noted by 45% (always), 27% (often), and 28% (sometimes).
 - Sources of information: When asked about the source of material, 63% reported medical journals, 27% textbooks, and 10% other sources (such as newspapers and Wikipedia).
- Overall, the results suggest that the Student's Corner activity was well received by students, particularly in improving scientific writing skills, fostering curiosity, and promoting active participation.

Table 1: Feedback Questionnaire on Student's Corner board activity

Item No.	Stem	Response (n=50)				
		Always	Often	Sometimes	Rarely	Never
1	Does this activity create awareness of the topic?	45 %	33%	22%	-	-
2	Does this activity promote Self-directed learning in you?	39%	27%	34%	-	-
3	Does this activity promote curiosity to learn more physiology topics in you?	53%	30%	17%	-	-
4	To collect the content for the write-up did you use standard search engines like Scopus, Pub Med, and Google Scholar?	44%	28%	11%	17%	-
5	During the process of this student activity do you think you acquired critical thinking skills (to logically think and relate ideas as connecting points to the fact)?	45%	27%	28%	-	-
6	During the process of this student activity did you improve your scientific writing skills?	89%	11%	-	-	-
7	Is this new information beneficial to you?	44%	28%	28%	-	-
8	Did you enjoy being part of this activity?	67%	23%	10%	-	-
9	Does this activity motivate you to take up more such activities?	45%	27%	28%	-	-
10	Source of information collected from	Medical journals (63%) Recommended text books (27%) Other sources like newspapers, Wikipedia (10%)				

Discussion

This idea of a student corner was developed during the COVID-19 pandemic, as a response to enormous new information/myths broadcast through television news and spread through

social media. About 30-35% of news, videos, and pictures shared on social media were found to be false, spreading faster than real news and creating unwanted anxiety (Pennycook et al., 2020). One myth propagated at the time suggested that the

coronavirus affects both animals and birds and that people who consume meat are at risk of contracting the virus from animals. Such inaccurate news and unproven scientific facts created confusion. This confusion made students more curious about the content. So we encouraged the students to engage in self-directed learning to collect reliable information from reputable medical journals including PubMed, Scopus, and Web of Science as well as online resources and prescribed books. The gathered data were verified by a mentor before being displayed to the LMS and student corner board. This practice helped students develop conceptual knowledge and improve their application skills. Based on the responses received from the students, the student corner activity could have stimulated various areas of the brain, making the student an active learner. This activity engaged the brain functions that support learning processes (like curiosity, memory, problem-solving, and critical thinking, and writing skills). From a physiological perspective, the prefrontal lobe is also involved in critical thinking. The sensory-associated areas of the parietal, temporal, and occipital lobes of the brain are involved in learning and memory. While declarative memory involves the hippocampus, amygdala, and associated temporal areas in the limbic system, subcortical structures, particularly the caudate, putamen, cerebellum, and part of the brain stem are involved in skilled writing (Boss, 1986). It increases interest in the subject and in-depth knowledge about the particular topic Gareau MG., *et al.* reported that the central nervous system (CNS) controls cognition, and neurogenesis and long-term potentiation both play a role in memory formation and storage (Gareau, 2016). Falck *et al.* reported sedentary behavior is associated with a reduction in cognitive function and also leads to dementia. Physical activity increases cognitive function (Falck, Davis and Liu-Ambrose, 2017). Constructivist views of learning have brought conceptions of learning to attention again. Concepts are considered as significant factors in learning success. Students may have different perceptions, depending on their educational experience. Students learning scientific facts have mental constructs or 'theories. If asked to explain the

phenomenon to which they are exposed, they will be able to explain it more clearly. The practice students' corner board activities were implemented in their studies to promote a better understanding and application of physiological principles in clinical medicine among medical students. This results in students needing to possess new information apart from their regular curriculum. The benefits of this activity were to promote critical thinking, literature search, and writing skills among medical students.

Conclusion

The Student's Corner activity was reported to be effective in enhancing curiosity, self-directed learning, and critical thinking among students. It improved scientific writing skills and promoted the use of standard academic resources. Overall, students perceived the activity as beneficial, enjoyable, and motivating for the students.

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Ethics statement

The above activity was designed as a teaching learning activity and anonymous feedback obtained ethical approval was not obtained.

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