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YouTube, Med-Cram, Online Med-Ed, and Traditional Lectures: A Comparative Study of Healthcare Students' Preferences

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ABSTRACT

The computer technology revolution drove the widespread adoption of online learning resources in higher education, met the preferences of tech-savvy students, and was accelerated by the pandemic. **Objective:** To evaluate learning style preference among health care students. **Methods:** This comparative cross-sectional study was conducted between two groups: the first one attended conventional live lectures, and the second one used other online learning resources for undergraduate students at Combined Military Hospital (CMH) Lahore Medical College (LMC) and Institute of Dentistry (IOD) Lahore from May to July 2024. The study involved 296 undergraduate students from various healthcare disciplines. First-year students were excluded from the study. Data collection employed a validated questionnaire assessing dimensions such as social presence, interaction, and satisfaction. **Results:** The results revealed a strong preference for in-person learning, citing enhanced engagement, interaction, and immediate feedback as key advantages. Despite the convenience and flexibility of online learning, it fell short in replicating the depth of interpersonal communication and satisfaction achieved in traditional settings. **Conclusions:** It was concluded that a hybrid learning model, combining the strengths of both approaches, could better address diverse student needs. Future research should explore the effectiveness of such models in improving educational outcomes across healthcare fields.

INTRODUCTION

The computer technology revolution drove the widespread adoption of online learning resources in higher education, met the preferences of tech-savvy students, and was accelerated by the pandemic. This prompted rapid adaptation to remote teaching, fostered innovation in teaching methods and digital skills, and emphasized the need for inclusive technology to address diverse student needs and ensure equitable access to education [1]. Emerging technologies like internet streaming videos on platforms like YouTube, Med-Cram, Online Med-Ed, Google, and Zoom have made higher education more accessible and affordable for many students [2]. In e-learning,

learners access instructional content and activities at any time, independent of classroom schedules, benefiting from various resources like course notes, e-books, and videos, and engaging in online activities tailored to enhance learning experiences [3]. In Pakistan, most higher education institutes used face-to-face modes of education, and online education was not as extensively used in the bygone days [4]. Online learning involves utilizing the internet for studying, communication, and support to enhance knowledge and growth. This necessitated the enhancement of e-learning in medical education through resource provision and training while ensuring safe on-site clinical teaching [5]. In contrast, a study highlighted that face-to-face dialogue resulted in more effective communication due to enhanced neural synchronization. Face-to-face lectures offered direct engagement, fostering interactive learning, immediate clarification, and personalized feedback for students. These in-person discussions allowed students to think more deeply and reflect on others' ideas, promoting richer intellectual exchange [6]. Each new generation of students had traits, concerns, and learning preferences that set them apart from previous generations. Understanding these differences was essential for educators to design learning environments that were engaging, motivating, and effective. As we moved into the modern era, significant advancements were made in face-to-face learning to accommodate these evolving needs and preferences [7]. A previous study indicates that students prefer face-to-face learning due to real-time social interaction, while online learning faces challenges like technology issues. Advantages of face-to-face include clarity and engagement, whereas online offers convenience but lacks effective interaction and support [8]. Previously, research focused on e-learning and conventional live lectures during the pandemic, specifically targeting medical students. Our study focused on face-to-face learning and online resources conducted outside the pandemic.

This study aims to appraise the perception of medical students about conventional live lectures and online resources.

METHODS

It was a comparative cross-sectional study, conducted at CMH LMC and IOD Lahore (May to July 2024) after obtaining approval from the ethical review committee, letter no. 22/ERC/ CMH/LMC. This study was conducted on students, currently enrolled in CMH LMC and IOD, belonging to five medical professions (MBBS, BDS, DPT, MIT, and Nursing) at various academic levels. Students belonging to the 2nd year to the final year were included in the study. First-year students were excluded from the study as they had limited exposure to both methods of teaching and learning in a professional set-up. The students were routinely exposed to face-to-face learning due to a compulsory attendance requirement by the university (at least 75% in a given year). Online sessions, if required, were conducted via Zoom, wherein attendance was marked only if the student joined the session within the first 20 minutes and remained in the session for the entire duration of the class. A total of 296 undergraduate students participated in the study. The sample size was calculated by using Taro Yamane's formula with 95 % confidence level and 5% margin of error as given below: n=N\1+N(e)^2. In formula: n=sample size, Total number of populations, e = Margin of error (%), n=1139\1+1139(0.05)^2 and n=296. A simple randomization technique was used to select subjects from the selected population. This study employed a pretested questionnaire [9] having three instruments (25 items and three dimensions) to gather the data from the target population. The questionnaire was used to measure learning preferences across healthcare disciplines towards online learning or conventional live lectures. The reliability of each variable used in this study was analyzed by Cronbach's alpha. The Social Presence Scale was developed by Spears [10].The Social Interaction Scale was developed by Picciano [11] and the Students' Satisfaction Scale [13]. The reliability of the full survey (composed of three components) was 0.973 for the online study and 0.977 for the face-to-face learning. Different codes were allotted to different demographic items. To evaluate students' perceptions of social presence, a set of questions (Q1 to Q9) related to this topic was included in the student satisfaction survey.The section on Social Interaction comprised six questions (Q9 to Q14), designed to assess scholars' satisfaction and engagement during face-to-face literacy. The questions concentrated on colourful aspects of the literacy experience, such as clarity of instruction, commerce, and course applicability. Satisfaction section included ten questions (Q15 to Q25) that explored scholars' favoured literacy styles and their situations of their situations. Responses were collected to gauge overall satisfaction and engagement in face-to-face vs. online learning environments. Data were entered into SPSS version 25.0. Descriptive statistics were used to analyze data, and frequencies and percentages were determined

RESULTS

The majority of participants were female (79.4%), and male were 20.6% of the total sample size. MBBS and BDS students formed about 48% of the total respondents, while the rest of the students (52%) belonged to allied health sciences (DPT, MIT & nursing). Of these students, the majority belonged to the 2nd (95, 32.1%) and 4th year (91, 31%), while the rest belonged to the 3rd and final year. Face-to-face learning was rated significantly higher than online learning, with students favouring in-person instruction across all dimensions (Table 1).

Table 1: Comparison of Responses to Face-to-Face Learning and Online Learning in Response to Social Presence Scale

Questions	Face-to-face Learning	Online Learning
	n (%)	n (%)
Communication in the course was impersonal.	210 (70.9%)	86 (29.1%)
I felt comfortable conversing in the course.	228 (77%)	68 (23%)
I felt comfortable introducing myself in the course.	220 (74.3%)	76 (25.7%)
The course introduction enabled me to form a sense of community.	227 (76%)	69 (23.3%)
I felt comfortable participating in the course discussion.	228 (77%)	68 (23%)
The instructor created a feeling of community.	238 (80%)	58 (19%)
The instructor facilitated discussion in the course.	235 (79.4%)	61 (20.6%)
I felt that my point of view was acknowledged by other students in the course.	233 (78.7%)	63 (21.3%)

The results showed a strong inclination towards face-to-face literacy, with a maturity of students indicating an advanced level of satisfaction with this system (Table 2).

Table 2: Comparison of Responses to Face-Face Learning and Online Learning in Response to Social Interaction scale

Questions	Face-to-face Learning	Online Learning
	No. of responses (%)	No. of responses (%)
Courses are an excellent means for social interaction.	219 (74%)	77 (26%)
I felt comfortable interacting and participating with other students in courses.	221 (74.7%)	75 (25.3%)
The amount of interaction with other students in the course was appropriate.	228 (77%)	68 (23%)
The quality of interaction with other students in the courses was appropriate.	240 (81.1%)	56 (18.9%)
The amount of interaction with the instructor in the course was appropriate.	234 (79.1%)	62 (20.9%)
The quality of interaction with the instructor in the course was appropriate.	239 (80.7%)	57 (19.3%

This preference was significantly more common compared to online or amalgamated literacy druthers (Figure 1).
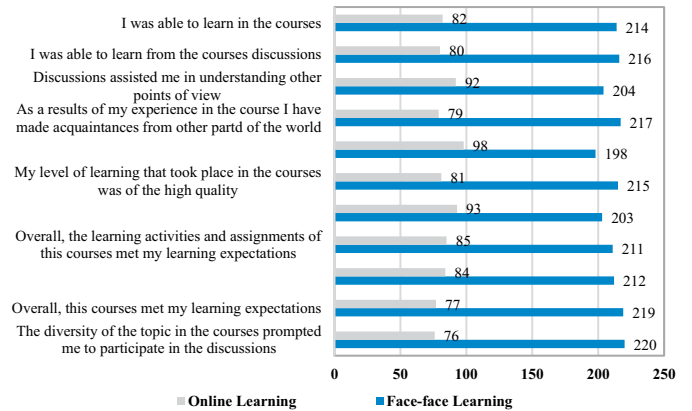

Figure 1: Comparison of responses to face-face learning and online learning in response to Social Presence scale

Overall, the findings suggested that scholars feel more engaged and satisfied in traditional, in-person literacy surroundings.

DISCUSSION

Our research sought to investigate and compare the learning preferences of medical students regarding traditional in-person lectures versus online resources. It involved evaluating how these different modes affected student satisfaction, interaction, and engagement, as well as their perceived effectiveness in meeting learning objectives. A significant majority of participants expressed a strong preference for traditional in-person learning over online alternatives. Students rated in-person learning more favorably in terms of social presence, interaction, and overall satisfaction. These results indicated that direct engagement with instructors and peers is a vital component of effective learning. Similar to our study, various other researches indicate that many students favor traditional classroom settings due to the perceived benefits of direct interaction and engagement. A study found that 83% of students favored in-person classes, citing enhanced interaction and learning experiences as primary reasons for their preference [13]. Similarly, students reported higher levels of engagement and participation in face-to-face settings, which fosters better communication and collaboration [14, 15]. Another survey reported that 53.1% of students preferred face-to-face learning due to its effectiveness in achieving learning outcomes compared to online formats [16]. This supports theories that highlight the importance of interpersonal engagement in improving both cognitive and emotional dimensions of learning. Likewise, previous studies pointed to a preference for in-person learning, emphasizing its capacity to facilitate better interaction and engagement-also, they noted that while online learning provided flexibility, it often fell short in aspects such as student interaction, satisfaction, and perceived effectiveness [17,

18]. Face-to-face learning offers real-time interaction and social skill development but has drawbacks like limited material processing and discipline issues-conversely, online learning provides flexibility and better academic progress, indicating a complex preference landscape among students [19]. Face-to-face learning often requires adherence to strict schedules, which can be challenging for students with other commitments [20]. Online learning offers accommodating diverse lifestyles; not all students can easily attend in-person classes due to health-related constraints [21]. However, many students feel isolated in online environments, which can hinder their motivation and engagement [14, 20]. Issues with technology and digital literacy can impede the effectiveness of online learning, leading to frustration among students [21]. Current study suggested investigating hybrid learning models to combine the advantages of online flexibility with the engagement offered by in-person methods. Even though a minor number of participants but they nevertheless supported online mode of teaching and learning. An earlier research recommended blended learning as an effective strategy to balance flexibility with meaningful interaction [22]. Conducted in a post-pandemic context, our research focused on preferences beyond the limitations of emergency remote teaching. Many earlier studies such as [23] examined learning preferences during the pandemic, concentrating on the rapid shifts to online education driven by necessity, which emphasized short-term adaptability rather than long-term preferences. Our study involved undergraduate students representing various healthcare fields. Other studies often targeted more specific subgroups, such as orthodontic students or broader student populations across different academic disciplines, providing less emphasis on healthcare education [24]. Our research took place in Pakistan, focusing on localized educational systems and cultural learning contexts while previous studies were conducted in Western settings, often reflecting different technological infrastructures, teaching methodologies, and student expectations. The preference of students for in-person learning likely indicates the importance they attribute to these contextual experiences, which are crucial for acquiring practical skills in their respective fields. This observation supports the hypothesis of "Constructivism learning theories," which assert that learning is most effective when it takes place in genuine, context-rich settings. It posits that education is most beneficial when it is integrated into authentic contexts, enabling students to relate theoretical knowledge to real-world applications. In healthcare education, in-person learning promotes activities like clinical training and laboratory work, which are consistent with constructivist principles of situated cognition [25]. Our research indicated that in face-to-face learning environments, students received immediate feedback from both instructors and peers, facilitating real-time reflection and adjustments. This iterative process fostered deeper learning and was in line with constructivist principles. Vygotsky's concept of the Zone of Proximal Development (ZPD) highlights the significance of instructors in providing support that enables students to accomplish tasks they could not manage alone. The immediate assistance and feedback available in face-to-face learning settings correspond with this principle, making it more effective for students compared to online formats [26]. In addition, our research indicated that in-person environments facilitate more effective communication through both verbal and non-verbal signals, including body language, tone, and facial expressions. These signals improve comprehension, lessen uncertainty, and contribute to a more engaging and personal educational experience, which students appreciate. Non-verbal communication, such as facial expressions and body movements, plays a crucial role in enhancing understanding and building connections during face-to-face learning [6]. The key findings of our research carry important implications for educators, educational institutions, and policymakers. Institutions ought to focus on developing interactive, engaging, and socially enriching classroom settings that promote student interaction and involvement. Educators might consider integrating more active learning methods, such as problem-based learning (PBL) and flipped classrooms, where students participate in hands-on activities and real-time discussions instead of merely attending passive lectures. Teacher training programs could offer workshops aimed at enhancing engagement through active learning strategies, improving communication in face-to-face settings, and delivering timely feedback to students. Although students showed a preference for in-person learning, the adaptability of online education also holds significant value. The inclination towards direct interaction implies that a hybrid or blended learning model could be the most effective. Educational institutions can create blended learning frameworks that merge the advantages of both in-person engagement and online resources, providing flexibility. This strategy can accommodate a broader spectrum of learning preferences, resulting in a more balanced educational experience.

CONCLUSIONS

This research examined the learning preferences of students in medical, dental, nursing, and allied health sciences at CMH LMC and IOD Lahore, comparing online resources like YouTube Med-Cram and Online Med-Ed with traditional in-person lectures. The results indicated a strong preference for face-to-face instruction, especially regarding social interaction, engagement, and overall satisfaction. Students appreciated the direct interaction and prompt feedback that traditional lectures provided, which were less common in online settings. Although

online learning offered flexibility and ease of access, it fell short of replicating the personal interactions found in live lectures, resulting in lower satisfaction levels among students. These findings imply that future educational approaches should explore hybrid models that integrate the advantages of both online and in-person learning to cater to the varied needs of students.

Authors Contribution

Conceptualization: AB, FI[1], FJ, TM, KHC
Methodology: AB, FI, FJ, TM, KHC, FI[2], RKA
Formal analysis: AB
Writing review and editing: AB, FI[1], FJ, TM, KHC

All authors have read and agreed to the published version of the manuscript

Conflicts of Interest

All the authors declare no conflict of interest.

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