



THE USE OF STUDENT FEEDBACK MECHANISMS IN DENTAL INSTITUTIONS OF HIGHER LEARNING

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ABSTRACT

Student feedback mechanisms are critical in academic institutions, particularly in professional courses like dentistry, where the quality of education has a direct impact on clinical competence and patient care. A well-structured feedback system allows institutions to assess and improve their teaching methodologies, clinical training, administrative processes, and overall learning environment. Effective feedback can enhance students' clinical competence and ensure they develop the necessary skills to provide safe and ethical patient care.[1] Dental students' perceptions of assessment methods, such as Objective Structured Clinical Examinations, and the feedback they receive during clinical training are important factors in shaping their overall educational experience. The aim of this narrative review is to explore the current state of knowledge regarding dental students' perceptions of feedback during their clinical training.

KEYWORDS : Student feedback, feedback mechanism, academic feedback

INTRODUCTION

Student feedback mechanisms are critical in academic institutions, particularly in professional courses like dentistry, where the quality of education has a direct impact on clinical competence and patient care. A well-structured feedback system allows institutions to assess and improve their teaching methodologies, clinical training, administrative processes, and overall learning environment.

Effective feedback can enhance students' clinical competence and ensure they develop the necessary skills to provide safe and ethical patient care.^[1] Dental students' perceptions of assessment methods, such as Objective Structured Clinical Examinations, and the feedback they receive during clinical training are important factors in shaping their overall educational experience.^[1,2]

The aim of this narrative review is to explore the current state of knowledge regarding dental students' perceptions of feedback during their clinical training.

Dental Students' Perceptions Of Feedback

Dental students' perspectives on feedback have been the focus of several studies. Feedback within clinical practice is central to the learning and development of dental students, as it helps them identify their strengths, weaknesses, and areas for improvement.^[3]

Moss et al., 2012 study found that dental students perceived feedback as important for their clinical skill development, but they often felt uncomfortable requesting feedback and were dissatisfied with the quality of the feedback they received. Structured and consistent feedback process enhance the students' learning experience.^[4]

Another study on dental students' views of Objective Structured Clinical Examinations found that students valued the feedback they received during these assessments, as it provided them with insights into their performance and areas for improvement.^[2]

Purpose And Importance Of Feedback Mechanisms

Feedback mechanisms serve as a two-way communication channel between students and the institution. They aim of feedback mechanism is to enhance teaching and learning,

improve clinical training, monitor curriculum relevance, address student concerns, promote institutional growth.^[3]

Structure Of Student Feedback Mechanisms

An effective feedback mechanism typically includes the following components, data collection, analysis of data collected and implementation of effective changes that can take place after analysis.

Data Collection

Collecting meaningful student feedback is a crucial aspect of evaluating and improving educational programs, as it provides valuable insights into the experiences, perspectives, and needs of the learners themselves. Traditionally, end-of-course evaluations have been a common method for obtaining student feedback, but these have been criticized for their biases and limited ability to drive real-time changes.^[5]

Student partner model allows students to play a more prominent role in curriculum evaluation and development, fostering a sense of ownership and investment in their learning. Furthermore, the incorporation of technology-based solutions, such as student response systems and online surveys, has emerged as a promising strategy for gathering real-time feedback from students. These methods enable teachers to actively monitor and analyze student responses during class, facilitating immediate adjustments to their teaching approaches. The analysis of student feedback can also be enhanced through the use of natural language processing and deep learning techniques, which can help identify patterns and insights that may not be readily apparent from traditional survey data.^[6]

Data collection is done using surveys and Questionnaires, focus group discussions. Suggestion boxes and digital platforms

1. Surveys and Questionnaires

Surveys and questionnaires have emerged as valuable tools for gathering valuable insights from dental students, allowing educators to identify areas for enhancement and implement data-driven changes. Evolving assessment methods, including surveys and questionnaires, can enhance the learning environment for students and improve the assessment experience for faculty. Notably, virtual reality-based technologies in dental education have received mixed

student attitudes, as measured through surveys, group interviews, and private interviews.

Moreover, student evaluation of teaching has been recognized as a valuable quality control tool and feedback mechanism for faculty to make improvements in the education system. However, the implementation of systematic student feedback practices remains limited in the Indian context, despite its proven benefits in other regions, such as the United States, where over 80% of dental schools routinely employ student feedback mechanisms.^[7]

Surveys and questionnaires, have the potential to enhance the learning environment and improve the assessment experience for both students and faculty.^[8]

Types of Surveys and Questionnaire^[9]

Various types of surveys have emerged as valuable tools to gather such insights, each offering unique advantages and addressing specific needs.

Paper Based Surveys: Traditional paper-based survey, where students provide written responses to a series of questions or prompts focus on gathering quantitative data, such as student satisfaction ratings or perceptions of course content and delivery.

Smart Device-based Surveys: Alongside paper-based surveys, the integration of smart devices and internet-based survey systems (Table 1) has gained attention in recent years. This interactive method allows for real-time feedback collection, with students using their personal devices to respond to surveys during lectures or laboratory sessions. This approach not only enhances student engagement but also enables immediate analysis and visualization of the gathered data, allowing for timely adjustments to teaching practices.

Audio-Visual Based Surveys: Another emerging trend in student feedback collection is the use of video or audio-based surveys. Lecturers may opt to provide personalized feedback to students through recorded audio or video messages, fostering a more personal and engaging interaction. Furthermore, the incorporation of open-ended qualitative questions in surveys can provide valuable insights into students' perceptions, concerns, and suggestions for improvement.

2. Focus Group Discussions

The focus group approach has been widely adopted in medical education research as it allows researchers to explore the perspectives of students, faculty, and other stakeholders on various aspects of the curriculum and educational experiences.^[10] The data collected from these discussions can provide a deeper understanding of the participants' experiences, opinions, and concerns, which can inform curriculum development, educational interventions, and program evaluations.

The use of focus groups in medical education research is well-supported by the literature. This research guide outlines the key steps in organizing, conducting, and analyzing focus group discussions, including the selection of appropriate participants, the development of an interview guide, and the analysis of the resulting data.^[10]

Benefits of Focus Group Discussion

1. They provide a platform for participants to share their perspectives and experiences in a more conversational and interactive setting, which can lead to richer and more nuanced data compared to traditional survey methods.^[11]
2. Focus groups can help researchers identify emerging themes and issues that may not have been anticipated, allowing for a more comprehensive understanding of the

topic.

3. Furthermore, focus groups can be particularly valuable in evaluating educational programs and curricula, as they allow for the collection of direct feedback from students and faculty. This feedback can then be used to inform curriculum revisions, enhance teaching methods, and address any identified areas of concern.^[6]
4. During the focus group discussion, the moderator plays a crucial role in facilitating the conversation, ensuring that all participants have an opportunity to contribute, and guiding the discussion towards the research objectives.

The interpretation of the focus group data is also crucial, as it involves contextualizing the findings and drawing meaningful conclusions that can inform educational policies, curricula, and teaching practices.

3. Suggestion Boxes

One potential approach to improving the feedback process is the use of suggestion boxes, which can provide students with a convenient and anonymous channel to share their experiences, concerns, and ideas for improvement. This method may be particularly beneficial in addressing sensitive issues that students may be hesitant to raise in a more public setting.

To assess the effectiveness of suggestion boxes in a dental school context, it is essential to evaluate the perceptions and experiences of students regarding this feedback mechanism. Previous research has identified several factors that influence the utilization of feedback by dental students, including the perceived value, credibility, and accessibility of the feedback, as well as the students' understanding of its purpose and processes.^[12]

4. Digital Platforms

Adoption of digital tools in dental education has significant implications for enhancing the quality of preclinical simulation training, improving the delivery of effective student feedback, and addressing the challenges associated with the transition to a more technology-driven educational paradigm. The COVID-19 pandemic has further accelerated the adoption of digital pedagogies in higher education, including the dental field.^[13] Rethinking assessment concepts in dental education have become a crucial focus, as the traditional in-person teaching and evaluation methods have had to adapt to remote and hybrid learning environments.^[8] Digital platforms have emerged as a valuable solution, providing a means to deliver timely, precise, and focused feedback to dental students, which is essential for the development of essential competencies. Dental schools, in particular, have a vested interest in embracing these digital innovations to enhance the learning and assessment processes for their students.^[14]

The benefits of digital platforms in dental education is the ability to provide students with real-time feedback on their performance during preclinical simulation exercises. This feedback can be delivered through interactive digital tools, such as Padlet, which facilitate the streamlining of the feedback process and enhance transparency.^[5]

Additionally, the integration of digital platforms can revolutionize the way student progress is tracked and evaluated. Dental students require constant feedback to refine their technical skills, communication abilities, and clinical decision-making. Digital tools can provide a more comprehensive and personalized approach to student assessment, allowing for the identification of areas for improvement and the implementation of targeted interventions.^[13,14,15]

Innovative assessment methods, such as virtual reality simulations, can create a more immersive and engaging

learning environment, further reinforcing the acquisition of essential competencies.

Academic Feedback

The practice of soliciting academic feedback from students on their faculty members has become an integral component of the higher education landscape, particularly in the context of dental colleges.

Existing literature highlights the multifaceted nature of this issue. A study exploring the attitudes of faculty and students at a dental institute in India found that the majority of faculty viewed student evaluation of teaching as a useful educational tool and were receptive to having their teaching evaluated, though they were divided on the use of such evaluations for faculty appraisal purposes.^[16] Similarly, another study comparing the perspectives of first-year biology students and academic staff found that while both groups were generally satisfied with the feedback process, there were concerns about inconsistencies in the feedback provided and the extent to which it informed future teaching practices.^[17]

Addressing these issues and aligning the expectations of students and faculty is crucial for maximizing the benefits of student feedback in dental education. One potential approach is the integration of alternative feedback mechanisms, such as audio feedback, which have been shown to enhance student engagement and responsiveness to the feedback provided.^[18]

Additionally, the development of clear and transparent evaluation criteria, as outlined in the "Criteria for Writing Effective Evaluation Forms" framework, can help ensure that student feedback is more reliable, valid, and constructive, ultimately supporting the continuous improvement of teaching and learning in dental colleges.^[19]

Clinical Feedback

Clinical feedback is a crucial component of dental education, as it enables students to improve their skills, enhance their clinical judgment, and develop the necessary competencies to become successful practitioners. However, the effectiveness of clinical feedback in dental colleges is often a subject of debate, with students sometimes feeling unsatisfied with the quality and quantity of feedback they receive.^[20,21]

The challenges in providing effective clinical feedback in dental colleges is the lack of consistent and structured feedback mechanisms. Studies have shown that dental students often perceive the feedback they receive as infrequent and ineffective, while faculty members believe they provide feedback regularly.^[1]

Dental students have indicated a preference for constructive feedback that is specific, timely, and focused on their strengths and areas for improvement.^[20] Clinical mentors should provide feedback based on direct observations of student behavior and performance, with an emphasis on correctable deficiencies.^[21] Additionally, the feedback should be delivered in a supportive and non-judgmental manner, encouraging students to reflect on their learning and take ownership of their professional development.

Feedback should be differentiated from evaluation, as the former is formative and aimed at improving performance, while the latter is summative and intended for assessment purposes. Dental colleges should ensure that students understand this distinction and that feedback is not used solely for evaluation purposes, but rather as a tool to guide their learning and growth.

Another crucial aspect of effective clinical feedback is the development of students' self-assessment skills. Studies have

shown that individuals with lower levels of competence tend to have the poorest self-assessment abilities, often overestimating their own abilities. Dental colleges should therefore focus on cultivating students' self-assessment skills, enabling them to accurately identify their strengths and weaknesses, and use feedback to address areas for improvement.^[21]

Clinical instructors play a vital role in guiding students and providing constructive feedback to enhance their learning and skills.^[1] Students generally felt they had adequate exposure to patients and access to necessary equipment, they expressed concerns about the level of supervision and feedback received during clinical procedures.^[3] Students also highlighted the need for more one-on-one guidance from faculty members, as well as more opportunities to receive detailed feedback on their performance. Improving the clinical training experience for dental students is crucial for developing competent and confident healthcare professionals.^[1,3]

Support Services

Dental education is a multifaceted field that requires not only a strong foundation in clinical skills but also the development of personal and professional attributes essential for success as a practitioner.^[22] One critical aspect of dental education is the accessibility and availability of support services, such as counselling, library resources, and mentorship programs, which can significantly impact the overall well-being and academic performance of dental students.

Counselling Services: The accessibility of counseling services in a dental college is a crucial factor in promoting students' mental health and well-being. Dental students often face high levels of stress and anxiety due to the demanding nature of their program, which can lead to various mental health issues.^[1] Providing readily available and confidential counselling support can help students navigate these challenges and develop coping strategies, ultimately enhancing their academic and personal success.^[20]

Library Resources: Additionally, the availability of comprehensive library resources in a dental college is essential for supporting the educational and research needs of students. These resources, which may include access to academic journals, textbooks, and online databases, can enable students to engage in in-depth learning, stay up-to-date with the latest developments in the field, and conduct research projects effectively.

Mentorship Program: Finally, the presence of well-structured mentorship programs in a dental college can greatly benefit students as they transition from the academic to the professional realm. These programs, which pair students with experienced faculty or practicing dentists, can provide guidance, support, and valuable insights that can shape the students' professional development and increase their job satisfaction and retention in the field. Previous studies have highlighted the importance of mentorship programs in various healthcare professions, including dentistry.^[22] While the prevalence of such programs in dental education is not well-documented, there is a growing recognition of their potential to enhance the overall learning experience and professional preparedness of dental students.

Timing Of Feedback

Implementing Effective End-of-Term Evaluations: A Comprehensive Approach

As the academic landscape continues to evolve, the importance of comprehensive end-of-term evaluations has become increasingly evident. Such evaluations not only provide valuable feedback to course instructors but also serve as a critical tool for enhancing the overall educational

experience for students.^[6,23] Traditionally, end-of-term evaluations have been primarily focused on summative assessments, seeking to gauge the overall effectiveness of a course or rotation. However, recent research suggests that these evaluations can also possess formative characteristics, directly informing the teaching and learning process.^[24] Evidence indicates that faculty-developed and course-specific mid-term evaluations may offer greater insights for making effective real-time instructional changes, ultimately improving student perceptions and addressing community needs.^[25]

Literature advocates for the implementation of a continuous feedback model, wherein students are given multiple opportunities throughout the course to provide input and contribute to curriculum development and evaluation.^[6] This approach, which involves representatives from key stakeholder groups, including faculty, administration, and students, has been shown to enhance student engagement, identify curricular deficiencies, and facilitate timely interventions to address emerging issues.

As institutions of higher education strive to deliver high-quality educational experiences, a comprehensive and collaborative approach to end-of-term evaluations is essential. By incorporating both summative and formative elements, as well as leveraging the continuous feedback model, educators can harness the power of student input to drive meaningful and lasting improvements in teaching and learning.^[5]

Real-Time Feedback:

The Importance of Immediate Feedback in Dental Education

Effective dental education requires a multifaceted approach that not only imparts theoretical knowledge but also emphasizes the development of practical skills and clinical competence. Within this context, the provision of immediate feedback to dental students after lectures, workshops, or clinical sessions has emerged as a crucial component in facilitating their learning and enhancing their overall performance.

Numerous studies have highlighted the benefits of providing timely and targeted feedback to dental students. This feedback can help students identify their strengths and weaknesses, allowing them to tailor their learning strategies and focus on areas that require improvement. Furthermore, feedback has been shown to have a significant impact on students' future learning, as it encourages them to reflect on their performance and motivates them to continue developing their skills.^[20]

Dental education, with its emphasis on competency-based learning, necessitates a rigorous and comprehensive assessment system that goes beyond summative evaluations. Formative feedback, provided during the learning process, can play a vital role in guiding students' progress and supporting their development. However, research has consistently found that there is a disconnect between the feedback provided by teachers and the way it is perceived by students. To address this challenge, dental educators must be equipped with the necessary skills and strategies to deliver effective feedback. The use of techniques such as the "feedback sandwich" or the "Ask-Tell-Ask" model can help ensure that feedback is constructive, specific, and actionable, thereby enhancing its impact on student learning.^[14]

Additionally, the integration of emerging technologies, such as virtual reality-based dental simulators, can provide students with immediate and targeted feedback on their procedural skills. By incorporating these innovative approaches, dental programs can create a learning environment that fosters continuous improvement and

supports the development of competent and confident future dental professionals.

Prioritizing Student Feedback Implementation in Dental Curriculum

Implementing student feedback in the dental curriculum is a critical aspect of ensuring the quality and relevance of educational programs. Dental educators must carefully prioritize the changes suggested by student feedback and assign clear responsibilities for their implementation.^[26,27]

One key strategy is to engage in a comprehensive, school-wide process of values clarification and agreement on the desired characteristics of an ideal dental graduate.^[27] This can help establish a shared vision and guide the prioritization of feedback-driven curricular changes.

The active participation of students in curriculum design meetings is highly recommended, as it can enhance their professional, ethical, and social development while also providing valuable insights to faculty. Dental colleges should strive to overcome the historical barrier between students and faculty, fostering a collaborative environment where students' perspectives are actively sought and incorporated.^[26]

Studies have shown that a curriculum intentionally designed to promote critical thinking can help students improve these essential skills over time, regardless of their initial level.^[28] Dental accreditation standards now emphasize critical thinking and problem-solving, underscoring the need for validated, research-based learning models to guide curriculum design and assessment.^[29]

Dental schools should prioritize feedback-driven changes that support the development of students' critical thinking and problem-solving abilities, as these are key competencies for future dental practitioners. Responsibility for implementing these changes should be clearly assigned to specific faculty or administrative teams, with regular monitoring and evaluation to ensure their effectiveness.

In addition to critical thinking, dental curricula should prioritize changes that enhance students' ability to receive and incorporate feedback, as this is a fundamental aspect of competency-based education.

Leveraging Feedback to Enhance Teaching and Learning Outcomes

Student feedback can have a profound impact on student learning outcomes. When feedback is timely, specific, and focused on the task at hand, it can significantly enhance student motivation, self-regulation, and achievement. Additionally, feedback that highlights both strengths and areas for improvement, delivered in a supportive and respectful manner, is more likely to be perceived as valuable by students.

However, the effectiveness of feedback is not without its challenges. Feedback dynamics, which involve the reciprocal exchange of information between teachers and students, can be influenced by factors such as the quality of feedback, the level of trust and rapport in the classroom, and the willingness of both parties to engage in open and constructive dialogue.

By cultivating a growth mindset, where constructive criticism is valued, and student achievements are celebrated, teachers can effectively leverage feedback to guide their instructional decisions and support student learning.^[30]

Impact of Student Involvement in Institutional Decision-Making

Incorporating student feedback into curriculum evaluation and development can lead to positive outcomes. By actively

soliciting and integrating student input, institutions demonstrate a commitment to student-centered learning and empower learners to become active partners in their educational journey. Furthermore, the transparent inclusion of student feedback in accreditation processes not only aligns with regulatory standards but also provides tangible evidence of an institution's responsiveness to evolving student needs.

Beyond academic considerations, student involvement in decision-making can have a broader impact on the overall campus experience. Faculty-student interactions that extend beyond the classroom, such as participation in student organizations, have been shown to positively influence students' personal and professional development. When students feel their voices are heard and their perspectives are valued, they are more likely to develop a stronger sense of belonging and investment in the institution.

However, it is important to note that the implementation of student-centric decision-making processes requires careful consideration. Institutions must strike a balance between soliciting meaningful student input and maintaining appropriate boundaries, particularly in areas where students may lack the necessary expertise or context. Nevertheless, the potential benefits of fostering a culture of student engagement and shared governance are well-documented, and institutions should strive to create opportunities for students to actively contribute to the decision-making process.^[31]

Indicators of Success after Student Feedback Mechanism in a Dental College

The successful implementation of a student feedback mechanism in a dental college can be evaluated through various indicators. One key indicator is the level of student satisfaction with the assessment methods and feedback provided.^[2] Students' perceptions of the effectiveness and reliability of the feedback process can provide valuable insights into the success of the system.^[7] Another important indicator is the impact of the feedback mechanism on students' learning and skill development. Effective feedback should not only identify areas for improvement but also reinforce positive behaviours and facilitate longitudinal development.^[23] Measuring the extent to which students engage with the feedback and apply it to enhance their competencies can be a strong indicator of success. The design and implementation of the feedback system itself is also a crucial factor. Criteria such as the clarity of evaluation forms, faculty calibration, and the timeliness and quality of feedback can all contribute to the overall effectiveness of the system. Additionally, the ability of the feedback mechanism to inform curricular changes and program improvements can be a significant indicator of success. Closing the feedback loop by demonstrating how student input has been used to enhance the educational experience is a key aspect of a successful student feedback system.^[19,20]

The literature suggests that a well-designed and implemented student feedback mechanism can have far-reaching benefits for both students and the dental college. By prioritizing the development of student confidence, reinforcing positive behaviours, and facilitating continuous improvement, the feedback system can contribute to the overall success of the dental practice.

Challenges in Feedback Mechanisms

1. Student Perceptions of Feedback Efficacy: Factors Influencing Participation Rates

One key factor that may influence student perceptions is the extent to which past feedback has been acted upon. Students may perceive feedback as ineffective if their previous suggestions were not addressed, leading to a cycle of diminished participation and perceived value.^[32]

effectiveness of peer feedback, including students' attitudes towards the process, the role of the feedback giver,^[33] Studies have shown that students are more likely to accept feedback from a provider they perceive as credible and knowledgeable about the subject matter and learning objectives.^[34] Furthermore, the way feedback is delivered and organized can also impact its perceived value and utility.

Successful feedback processes rely on a collaborative and supportive relationship between the feedback giver and receiver, where the relevance and timeliness of the information are paramount. Students who are able to understand the feedback, recognize its value, and take steps to implement it are more likely to benefit from the learning experience.^[32]

2. Overcoming Resistance to Feedback in Academic Institutions

Faculty and administration within academic institutions can often be reluctant to adapt to feedback, viewing it as criticism rather than an opportunity for growth and improvement. This resistance to feedback can stem from a prevailing "culture of niceness" that fails to facilitate honest and constructive criticism. Additionally, the lack of clear expectations and messages around feedback can contribute to this resistance, as faculty may not understand the value and purpose of feedback.

Resistance is the perceived threat to one's self-image and status within the institution. Individuals may feel that accepting feedback is an admission of shortcomings or incompetence, leading them to defensively dismiss or ignore feedback. Further, the transient nature of faculty-student relationships in academic settings can hinder the development of trust and openness necessary for effective feedback.

To overcome this resistance, academic institutions must work to foster a culture that values feedback as a tool for professional growth and development. This may involve clear communication of feedback expectations, as well as the implementation of feedback processes that are perceived as fair, constructive, and aligned with institutional goals. Additionally, institutions should prioritize the development of long-term, trusting relationships between faculty and students, as this has been shown to increase the receptivity and effectiveness of feedback.^[32]

3. Closing the Feedback Loop: Fostering Trust in the Assessment Process

The importance of closing the feedback loop in educational settings cannot be overstated. When students are not informed about the actions taken in response to their feedback, it can undermine their trust in the assessment process. Effective feedback, when used appropriately, can serve as a powerful tool to enhance student learning, motivation, and self-regulation.^[16]

Timely closing of the feedback loop has been shown to improve staff and student engagement, as well as overall course satisfaction. By providing students with clear and explicit information about the actions taken based on their feedback, teachers can demonstrate that their input is valued and used to inform instructional decisions. This, in turn, can foster a sense of partnership and collaboration between students and teachers, where both parties work together towards the common goal of enhancing learning outcomes.

However, some staff may face challenges in processing and effectively responding to student feedback. This highlights the need for professional development and support to help teachers understand how to best utilize feedback data to inform their teaching practices.

Research has identified several factors that can influence the

Effectively closing the feedback loop also requires a supportive and inclusive learning environment, where students feel empowered to voice their concerns and are confident that their feedback will be taken seriously.^[35]

In conclusion, the failure to close the feedback loop can undermine trust in the assessment process and hinder the potential benefits of student feedback. By prioritizing timely and transparent communication about the actions taken in response to student feedback, educators can strengthen the partnership between students and teachers, ultimately leading to improved learning outcomes.^[35,36,37]

4. Leveraging Technology and Streamlining Processes to Enhance Feedback Collection and Analysis

Effective collection, analysis, and utilization of student feedback are crucial for institutions to drive strategic decision-making and ensure continuous improvement. However, many higher education institutions face challenges in this area due to insufficient staff or technological infrastructure. To address this problem, institutions must explore innovative solutions that leverage technology and streamline internal processes.

The key challenge is the lack of efficient data collection mechanisms. Traditionally, institutions have relied on manual surveys and feedback forms, which can be time-consuming and lack the ability to capture real-time insights. To overcome this, institutions should invest in robust digital feedback platforms that can seamlessly integrate with existing systems and provide a centralized hub for collecting, organizing, and analyzing student data.

Another challenge is the limited capacity to analyze and act on the collected feedback. Many institutions struggle to extract meaningful insights from the vast amounts of data, hindering their ability to make data-driven decisions. To address this, institutions should leverage advanced data analytics tools and techniques, such as natural language processing and machine learning, to automate the analysis of feedback and identify key trends and patterns.

Furthermore, institutions should strive to create a culture of continuous improvement by embedding feedback collection and analysis into their operational processes. This can be achieved by regularly reviewing student feedback, aligning it with institutional goals, and implementing targeted interventions to address the identified areas of improvement.

By addressing these challenges and embracing a technology-driven approach to feedback management, higher education institutions can enhance their responsiveness to student needs, strengthen their commitment to quality assurance, and ultimately drive strategic transformation.^[38,39]

1. Improving Student Participation in Feedback Systems at a Dental College

The effective use of feedback is essential for the professional development of dental students. However, studies have highlighted that dental students often perceive the feedback they receive as infrequent and ineffective.^[1] This disconnect between students and faculty perceptions of feedback suggests a need to better understand how students engage with and utilize feedback.

Potential avenue for enhancing feedback utilization is through the use of audio feedback. Existing research indicates that audio feedback is more engaging for students compared to written feedback, as it allows for more nuanced and personalized delivery. Additionally, audio feedback may be more accessible and convenient for students, potentially increasing their willingness to engage with and apply the feedback they receive.

The review of existing literature indicates that audio feedback

could be a promising approach to increasing student engagement with feedback.^[18,40] Previous studies have found that audio feedback is highly acceptable to students and has the potential to be a valuable supplemental training resource.^[44] Furthermore, research on dental student perspectives has highlighted the need to understand how students use and perceive feedback to better support their engagement.^[11,12]

Dental education programs should explore implementing audio feedback as a means of increasing student engagement and utilization of the feedback provided. By understanding the specific barriers and facilitators to feedback engagement, dental colleges can develop more effective strategies to support the professional development of their students.

CONCLUSION

Research has shown that dental students highly value feedback on their clinical skills, task completion, decision-making, and communication abilities. However, studies have also highlighted that students often perceive the feedback they receive as infrequent and ineffective, while educators believe they are providing sufficient feedback. This discrepancy suggests a need to improve the feedback process in dental clinical training to support the effective development of future professionals.

Dental students' perceptions of feedback during their clinical training are an important consideration in improving the quality of dental education. While students recognize the value of feedback, they often perceive the feedback they receive as inadequate. Enhancing the feedback process through collaborative efforts between students and educators can lead to more effective learning and development of future dental professionals.

Student feedback is a powerful tool for growth and excellence in dental education. When utilized effectively, it fosters a culture of continuous improvement, creating a better learning environment and producing competent dental professionals. Ensuring transparency, inclusivity, and responsiveness is key to maximizing its impact.

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