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Teacher Feedback and Student Learning-The Students' Perspective

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Abstract:

Introduction:

Feedback from teachers to students plays an important role in informing students about the outcome of their assessments. It contributes to students' ongoing learning. The aim of this study was to investigate dental students' perceptions of the feedback given to them by their teachers in Europe.

Materials & methods:

An online questionnaire was completed by dental students throughout Europe in this quantitative study. Data were collected via Google Forms, transferred to an excel spreadsheet and analysed using SPSS software Version 24.

Results:

234 students studying in 9 different European countries completed the questionnaire. These students were born in 36 different countries within and beyond Europe. 84% (n=197) were undergraduate students. 20.3% (n=48) students reported receiving feedback following summative assessments. 81.2% (n=190) students reported constructive criticism as their preferred mode of receiving feedback. 11.3% (n=26) students did not know who delivered the feedback to them. 71% (n=166) students felt that the feedback they received had a significant impact on their future learning.

Conclusion:

It would appear that there is some diversity in dental students' perceptions of: i) who delivers feedback, ii) when feedback is given, iii) the consistency of feedback received, and iv) the style of feedback they preferred compared to that delivered by tutors. Feedback is being provided to dental students in an appropriate and helpful manner, although there is still room for improvement. Students were aware of the significance of feedback and its impact on future learning.

Clinical significance:

Most European dental students prefer to receive constructive feedback. Feedback was seen to have a significant impact on future learning despite over one in five students not knowing who had delivered their feedback. Feedback following clinical teaching should have a positive effect on students' skills and motivation to learn.

Keywords: feedback methods, feedback delivery, student learning

Disclosure Statement:

None of the authors have reported any Conflicts of Interest in the production of the study or writing this manuscript.

Introduction:

Feedback is considered essential for the learning process for students ¹⁻³. One particular difficulty is identifying a definitive definition for feedback. It is suggested that "Feedback is an essential part of education and training programmes. It helps learners to maximise their potential at different stages of training, raise their awareness of strengths and areas for improvement, and identify actions to be taken to improve performance"⁴. In educational settings, feedback has also been characterized as: "Information provided by an agent regarding aspects of one's performance or understanding"¹. Feedback has also been defined as, "The means by which a student is able to gauge at each stage of the course how he or she is going in terms of the knowledge, understanding and skills that will determine his or her result in the course"⁵. The delivery of feedback is bi-directional, namely tutors to students and students to tutors⁶. Surveys looking at the student learning experience often highlight the lack of feedback students identify they receive. The findings of the National Student Survey (NSS) for undergraduate students in UK universities is one such example⁷. Studies have also shown that most tutors consider feedback to be integral to the student learning experience³. However, there are variations in what is understood by the term 'feedback' and how it is interpreted in educational circles 1,5,8,9. Further evidence adding to the confusion in the definition of feedback was reported particularly related to the clinical settings ^{8,9}. This lack of clarity in defining the role of feedback can be partially ameliorated by using the following five broadly based outcomes when delivering feedback, to: i) make corrections, ii) effect reinforcements, iii) undertake forensic diagnoses, iv) establish bench-marking and v) facilitate longitudinal development, as in the concept of feed-forward 10. Given the inherent anomalies with feedback described above, it is therefore understandable that students are generally critical of the feedback they receive.

The literature has highlighted the importance of confidence to dental students in the learning process, at the undergraduate and postgraduate levels. ^{8,9,11}. Feedback received by students following a summative assessment or during a formative teaching session would help to develop student confidence, which in turn will have a positive impact on their motivation and goal setting. This will enhance the students' learning experience ^{9,10,12,13}.

It has been reported that students perceived a grade or mark given, following a summative or formative assessment, as more important than the feedback itself¹⁴. However, it has been stated that omission of grades when giving feedback to students engenders more confidence and thereby reinforces the value of observational feedback to support their learning¹⁵. Clinical students' perceptions of feedback

suggested that they were mindful of the objectives for giving feedback, and the degree of this awareness varied according to their stage of training¹⁶. Senior undergraduate clinical dental students ascribed greater value to feedback than their junior counterparts and perceived it to provide useful recommendations to enhance their development. They also conveyed that limited actual feedback experienced by students was the main reason for their frustration¹⁶

There has been much speculation about the cultural influences on how feedback is delivered or received. Endorsed strategies supported by the published literature emphasised the socio-cultural aspects of these multifaceted exchanges. They employed fundamental notions from three hypotheses underpinning the suggested approaches and included socio-cultural, politeness and self-determination theories¹⁷

The assumption that "one size fits all" when looking at feedback has been well illustrated when looking at the influence of culture on how feedback was received within the same organisation. In this study, workers in Germany preferred feedback to be tough, critical, to-the-point and negative, whereas workers in China preferred a less demotivating, softer style of feedback ¹⁸.

This study aimed to investigate the perceptions dental students had of their teacher delivered feedback.

Methodology:

Research Ethics Committee approval was given by University College London (UCL) (6552/001).

This study analysed data collected via a questionnaire, which although not strictly validated was designed according to published guidelines¹⁹, to gather information from undergraduate and postgraduate dental students throughout Europe. The questionnaire was only delivered in English as this is the most common language used in dental education throughout Europe. European countries were defined as either: i) European Union (EU) member states or ii) Non-EU states, with a mutual Customs Union agreement with the EU, at the time of data collection²⁰. For data analysis, Turkey was considered as part of Eastern Europe.

The use of questionnaires are considered a useful research tool for collecting data including difficult to quantify aspects, such as views, experiences, perspectives and values ¹⁰.

This current study used a mainly quantitative questionnaire for collecting useful information to ascertain trends in perceptions, opinions and beliefs^{21,22}. The design of the questionnaire was informed by the literature where similar healthcare settings were investigated²³.

For clarity and to reduce ambiguity for respondents, feedback for this study was defined as: "Verbal, written or audio-visual information, relating to a person's performance with a task, which can be used to improve their performance"³. The questionnaire included a combination of Likert scale, open text boxes, single answer, and multiple-choice type questions as previously described ¹⁹.

The online questionnaire (Google Forms; docs.google.com/forms/), was distributed by the Association for Dental Education in Europe (ADEE). The questions were arranged into three parts: i) demographic data, ii) actual feedback delivery and iii) students' preferences on how feedback should be delivered. The questionnaire was tested, refined and finalised following a pilot study with the dental students at Brescia dental school in Italy. The questionnaire was delivered to European dental schools that expressed an interest (at a previous ADEE conference) in supporting the study.

A reminder email was sent after two weeks, and the questionnaire stayed open for a further month to optimise the response rate. Data were collated (Excel Spreadsheet, MS 2016) and analysed (IBM SPSS Statistics for Windows, Version 24.0. Armonk, NY: IBM Corp)²⁴.

Results:

234 responses were received from dental students studying in eleven dental schools located in nine different European countries. In total 48 different countries were represented in the study, by virtue of the respondents' country of birth (n=36), the country where they lived from 0-18 years (n=46) and the country where they studied dentistry (n=9). The geographic spread of respondents included Europe (n=18), the Middle East (n=12) and the rest of the world (n=18). 77.4% (n=181) students studied in their country of birth. The mean respondent student age was 24.5 years (SD 18.4). 84% (n=197) of the respondents were undergraduate students. Undergraduate students had been studying for a mean of 2.2 years (SD 1.04) whereas postgraduate students studied for a mean of 2.7 years (SD 2.17).

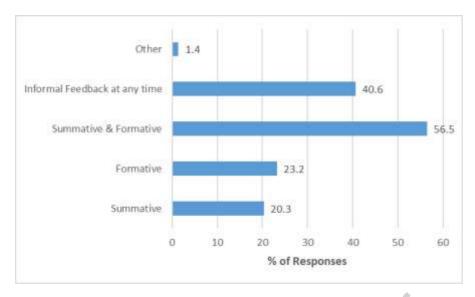


Figure 1. Opportunities for feedback from the Tutors

Figure 1 illustrates the various opportunities for tutors to deliver feedback to students, which took place predominantly following formative and summative assessments. 40.6% (n=95) of the respondents indicated that they received informal feedback at any time.

82.6% (n=193) of the respondents stated that it was important who delivered feedback to them. The most common person to deliver feedback was reported to be the tutor (57.3%; n=134). Unexpectedly, 15% (n=35) of dental school administrative staff were reported by the respondents to have delivered feedback to them. Interestingly 10.3% (n=24) of the respondents reported not receiving any feedback whatsoever.

The majority of the respondents reported that 'constructive criticism' was their preferred style of feedback delivery (66.2%; n=155) (Figure 2). It was interesting to note that only 50.9% (n=119) reported receiving 'constructive criticism'. 1.7% (n=4) preferred to receive 'negative criticism', however, 23.1% (n=54) of the respondents reported actually receiving 'negative criticism' (Figure 2).

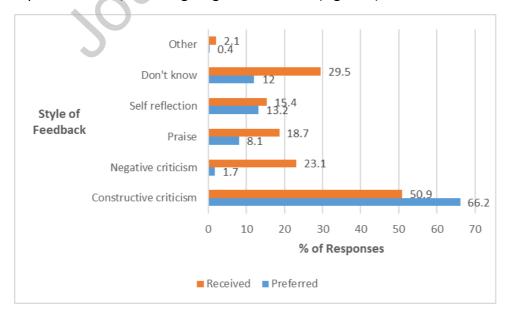


Figure 2. Style of feedback preferred and received by students

It can be seen that the majority of students preferred to receive 'constructive feedback', but a minority of students mainly from Eastern Europe reported favouring 'praise' (9.6%; n=16) or 'self-reflection (13.2%; n=22) as their preferred style of feedback (Figure 2). 16.2% (n=27) of the students from Eastern Europe reported not knowing what style of feedback they preferred.

86% (n=201) of the students reported that the feedback they received had a positive impact on how well they performed in future assessments.

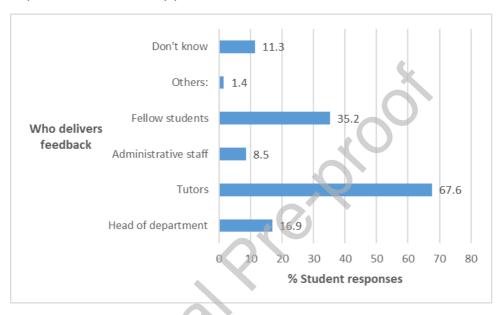


Figure 3. Illustrates students' reporting of who delivers feedback

Figure 3 illustrates that student reported 67.6% (n=158) of feedback was provided by their tutors. However, 35.2% (n=82) of the students identified that feedback was delivered by their fellow students.

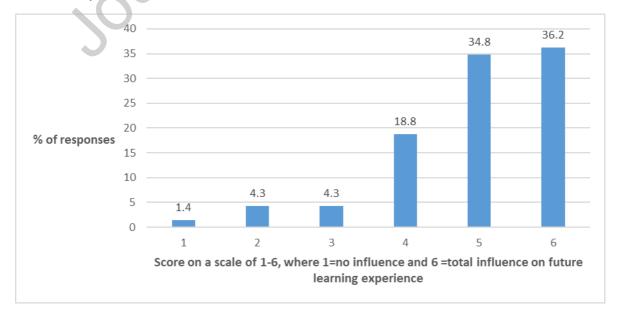


Figure 4. Illustrates students' thoughts on whether feedback influences future learning experience

A total of 89.8% (n=210) of the students scored 4, 5 or 6 to this question (Figure 4) and therefore agreed that feedback did influence their future learning.

46.2% (n=108) of the students received their feedback online.

Students from all regions of Europe preferred to receive feedback as constructive criticism (43%; n=100). However, some students from Eastern Europe reported self-reflection (9.4%; n=22) and praise (6.8%; n=16) as their preferred form of feedback (Figure 5).

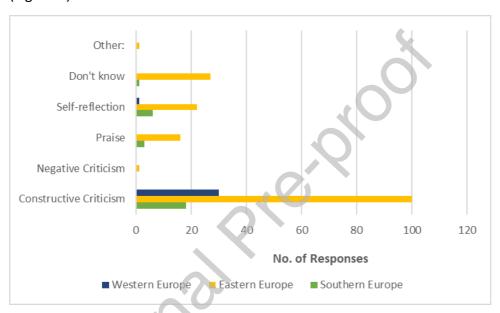


Figure 5 Illustrates the style of feedback preferred by students and their region of study in Europe (No respondents studied in Northern Europe)

Discussion:

This study evaluated data collected from questionnaires completed by undergraduate and postgraduate dental students whilst studying in eleven dental schools located in nine European countries.

The demographic distribution of respondents showed a wide variation in age, the number of years of study and whether they were undergraduate or postgraduate students. It was also noticeable that a minority of students studied dentistry in a country different to their place of birth. This would indicate that some students relocated to other countries to study dentistry. It may also indicate a lack of training opportunities within their country of birth, or a family relocation. This trend for

studying outside the country of birth was also noted for students from non-European countries such as Afghanistan, India, Pakistan and Malaysia, who wished to study at European dental schools. This also echoed similar motivational reasons why, and the general trend of how, students migrate to study abroad as part of a global society²⁵.

It was encouraging to see the student respondents in this study reported that informal feedback not related to assessment was provided as frequently as more formal feedback linked to formal assessments. These findings were supported by similar observations reported by tutors in a previous questionnaire based study³. This corroborates the overall importance of tutors providing feedback to dental students, and ensuring that it "is embedded in education, training and daily professional activities"²⁶.

It is gratifying to note that in several circumstances the students' perceptions of feedback are comparable to those reported by tutors³. There are however some exceptions that are worthy of further consideration. Only one in five of the student respondents in the current study considered that they received feedback following a summative assessment, whereas nine out of ten tutors reported that they delivered feedback after a summative assessment³. This large discrepancy could be explained by: i) the absence of a clear universally accepted definition of feedback; ii) students not recognising when they had received feedback from tutors; iii) variations in the value of feedback delivered by tutors; iv) students not acting upon the feedback given, due to a lack of confidence²⁷, and v) lack of experience in using the feedback process to enhance future learning, as per the concept of feedforward²⁸.

Despite the diversity, regarding the country of birth and early years of life, amongst the respondents in this study, students from participating schools overwhelmingly reported that their preferred style of feedback was constructive criticism. Potentially expected cultural differences in perceptions of feedback, as identified by other authors^{29,30,31} was not observed in this study. The lack of any cultural influence on feedback seen in this current study might be because students adopted a European style of feedback preference, thereby nullifying any potential cultural influence. The role of cultural differences with the delivery and receipt of feedback had not been taken into account with this current sample. Future studies could perhaps investigate the potential cultural implications of feedback delivery and receipt.

The current study reported that the student respondents had some preference for self-reflection as a favoured style of feedback. Reflection is a skill that can be developed in response to feedback to facilitate learning²⁶. One difficulty that students have with learning how to reflect is the lack of experience that tutors themselves have with self-reflection³⁰, making it onerous for the teachers to guide the students in developing the pertinent aspects of self-reflection.

The importance of reflection within the feedback process cannot be overstated. Participating in reflection is an essential element of education for university students.

Giving and receiving feedback in a reflective fashion will improve with practice and experience.³² Reflective learning requires students to contemplate the feedback they receive and feed forward to the next assessment thereby fulfilling the learning cycle³³. One teaching model describes a role for reflective learning to facilitate students' using feedback to feed-forward to the next assessment, thereby concluding the learning cycle³².

The style of feedback delivery can have an impact on the effectiveness of that feedback. A very small quantity of students in this study preferred to receive feedback as negative criticism, whilst the vast majority preferred constructive criticism. However, one in four students reported receiving negative criticism. In practice, this may be regarded as having a detrimental impact on the learning of students learning resulting in demotivation and deterioration in performance³¹

Many students in this current study felt that praise was an appropriate form of feedback. The importance of praise as an effective technique for delivery of feedback has been emphasised and suggested the beneficial impact of high rates of praise from tutors³⁴. It has been suggested that remedial feedback to facilitate improvement was linked with precise self-evaluation, compared to a high standard of positive feedback, such as praising good work which can result in students overrating their performance³⁵. Both remedial and praise feedback, have been reported to improve performance³⁶. This is in contrast to studies showing students in receipt of solely praise or complimentary feedback did not demonstrate similar levels of improvement compared to those in receipt of remedial feedback³⁷. It has been shown that the accomplishment of undergraduate medical students in receipt of instructive or constructive feedback, compared to those who received only praise for identical surgical procedures undertaken, indeed demonstrated a statistically significant improvement³⁸. This shows that the concept of praise alone is not universally accepted as a useful feedback technique. Although it may be pleasing for students to receive feedback through praise, this may not necessarily be the best approach without also considering other aspects of feedback delivery.

Concerning who delivered feedback to the student respondents, unsurprisingly seven out of ten students received feedback from their tutors, as was reported ³. However, one third of student respondents reported receiving feedback from their peers. Despite potential reservations about the quality of feedback given by peers, it was reassuring to note that a previous study concluded the absence of significant variations between the quality of feedback delivered by either experts or peers³⁹. The use of peer feedback can therefore be a useful adjunct to traditional staff assessment and feedback. This standpoint resonates with further work⁴⁰. which was in agreement that the provision of suitably trained students to deliver peer feedback following peer assessment; thereby helping to tackle the issue of staff and resource limitations, by delivering adequate and timely feedback ⁴⁰. This is in contrast to students reporting tutor feedback to be comprehensively of greater value than peer feedback ⁴¹. These authors concluded that peer feedback could provide support on clinical proficiency

assessments, although effective instructions are required to provide "peer feedback in a collaborative learning environment (as).... a reliable assessment for professionalism and may aid in the development of professional behaviour"⁴². Further peer feedback as part of a peer review process was reported to have "relatively modest improvements in the performance of dental students"⁴³. On the other hand, from the students' perspective, it has been reported that peer feedback was the most useful aspect of the feedback process⁴⁴.

Whilst student respondents felt it was important who delivered feedback to them, it was interesting to note that approximately one in ten of them did not know who delivered their feedback. This finding was in agreement with previous studies who stated that "Feedback must come from a credible, trustworthy supervisor who knows the student well, be delivered in a safe environment and stress both strengths and points for improvement" ⁴⁵. It was not possible within the current study to determine whether administrative staff within participating dental schools were directed by either academic or clinical tutors to deliver feedback to students by an academic or clinical tutors to deliver feedback to the students or whether they acted autonomously. Although health care settings may differ it has been considered that any member of a multi-disciplinary team with appropriate knowledge of the issues could deliver effective feedback²⁶. Feedback delivered in this manner can "give a clear direction of travel to improving behaviours, attitude and skills in clinical practice" ²⁶.

In spite of the modern technologies available to expedite communication with students, the oral/spoken approach with individuals or groups in a face-to-face fashion remains an ever dominant approach ⁴⁶. In the current study, tutors reported an overwhelming preference for personal conversations with students, when delivering both academic feedback and pastoral support. This supports the observation that face-to-face communication is favoured by students for on-site teaching with frequent interaction between tutors and student⁴⁷.

Most student respondents reported that the feedback they received did have a positive influence on how they performed in future assessments, with only one in ten of them indicating that it either didn't have a positive effect or that they were uncertain. This would indicate that the majority of undergraduate and postgraduate dental students in this study were pleased with feedback delivered to them, which was perhaps against the trend of students from other faculties in the UK⁷. In contrast, others have reported that student learners expecting feedback, would use superior approaches from the very beginning, to facilitate their learning⁴⁸. This is encouraging as the majority of student respondents in this study clearly received feedback and responded to it positively, thereby advancing their ongoing learning.

This study collected data before the COVID-19 pandemic when face-to-face teaching was the norm. During the global lockdown of 2020-21, the style of teaching both undergraduate and postgraduate dental students had to be adapted⁴⁹ to accommodate social distancing and remote learning; this could present a good opportunity for future studies.

Limitations:

One possible limitation of this study was the use of a questionnaire delivered only in English, thereby potentially disadvantaging non–native English speakers. However, this approach was adopted to avoid potential inconsistencies in translation and noting that English is the most commonly used language in dental education in Europe.

There is a need for developing a specific feedback culture. "An integrated approach must be developed to support a feedback culture" and to realise genuinely valuable feedback, the health care professions need to encourage student reflection 50

It would be helpful to develop a definition of feedback that encompasses all aspects of teaching in dentistry, which may also be inclusive of medical education. The number of definitions for feedback within the educational domain, do not take into account the important clinical teaching role that is fundamental to dental and medical education.

The relatively low response rate to this study means that the results may not be representative of all dental students' views throughout Europe.

Conclusion:

Students largely perceived that feedback was provided to them in a judicious manner, which helped to address their learning needs. Most student respondents preferred to receive feedback in the form of constructive criticism, and there after self-reflection and praise. Although comprehensive feedback was being provided to dental students in this study in an appropriate and helpful manner, there is still room for improvement.

Based on observations during the study and the literature, the authors propose the following definition of feedback for dental education taking into consideration the clinical nature of the profession: "The provision of specific information comparing the clinical and non-clinical performance of students and tutors, against recognised and agreed good practice standards, with the intention of improving this overall performance".

Conflict of interest:

There were no financial or professional interests that affected the study

Credit Author Statement

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Data availability statement:

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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Figures

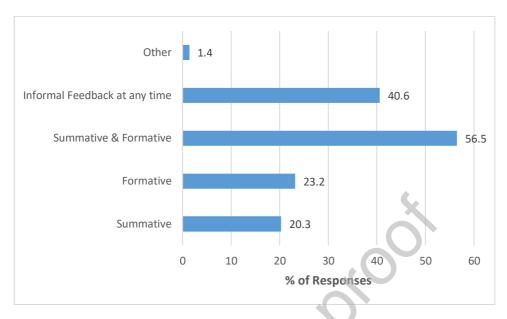


Figure 1. Opportunities for feedback from the Tutors

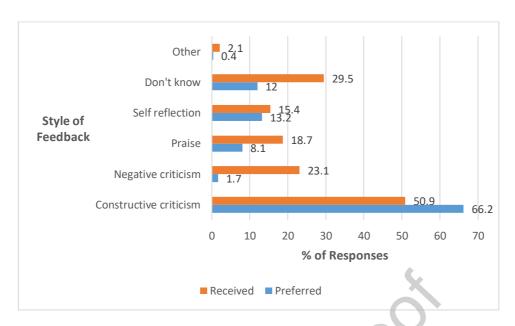


Figure 2. Style of feedback preferred and received by students

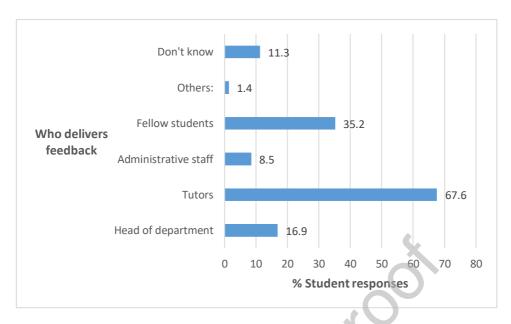


Figure 3. Illustrates students' reporting of who delivers feedback

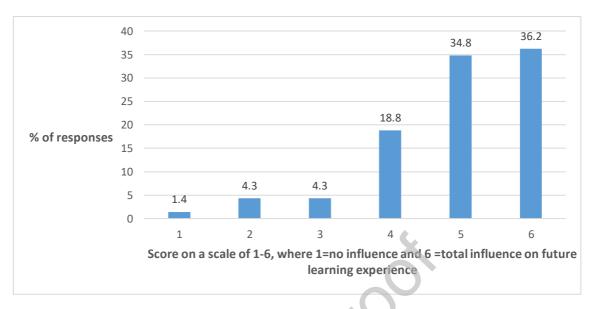


Figure 4. Illustrates students' thoughts on whether feedback influences future learning experience

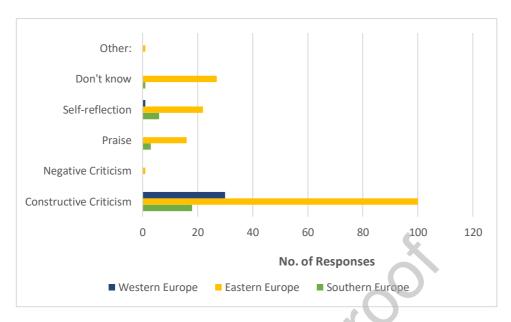


Figure 5. Illustrates the style of feedback preferred by students and their region of study in Europe