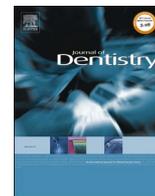




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## Teachers' feedback practices in COVID-19: Has anything changed?

P.D. Fine<sup>a,\*</sup>, A. Leung<sup>a</sup>, I. Tonni<sup>c</sup>, C. Louca<sup>b</sup>

<sup>a</sup> UCL Eastman Dental Institute, London, United Kingdom

<sup>b</sup> University of Portsmouth Dental Academy, Portsmouth, United Kingdom

<sup>c</sup> University of Brescia, Brescia, Italy

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### ABSTRACT

**Objectives:** Feedback delivered by teachers to dental students has a profound impact on students' ongoing learning and development. The aim of this study was to investigate changes to feedback practices as a result of the global COVID-19 pandemic and the ensuing challenges to delivering quality dental education.

**Methods:** This was a mixed method study. Quantitative data were collected through a bespoke questionnaire delivered to attendees of the Association for Dental Education in Europe (ADEE) annual conference. Qualitative data were collected via four focus groups at the conference, each discussing a particular theme. The questionnaire and conference were delivered online via Gmail and MS Teams, respectively.

Quantitative data were analysed descriptively; qualitative data were analysed narratively, and both were triangulated.

**Results:** 67 questionnaire responses were received which represented a 26% response rate. Respondents came from 12 different countries within Europe and beyond and reported having a variety of roles in their dental schools. 77.6% ( $n = 52$ ) respondents indicated they had changed their delivery of feedback due to the pandemic. One-third of respondents reported giving more feedback and 76% ( $n = 51$ ) increased their quantity of feedback delivered online.

The increased incidence of online learning had resulted in a greater emphasis on teaching small groups, increased use of technology, increased emphasis on student centred learning and heightened awareness of changing the style of feedback delivery.

**Conclusions:** The COVID-19 pandemic has enforced rapid changes to the delivery of feedback by teachers to dental students, which could pave the way for a more positive, inclusive, individualistic and effective approach for delivering feedback now and in the future.

**Clinical significance:** The COVID-19 pandemic resulted in a significant shift from face-to-face teaching to online tuition, which promoted a need to re-evaluate the best method of delivering feedback to students. The ongoing changes in teaching approaches have a profound impact on clinical skills acquisition for dental students. The quality of the feedback students receive may help to enhance the synergies between theoretical online teaching and hands-on clinical skills acquisition, which has been altered and disrupted due to the ongoing pandemic.

### 1. Introduction

The impact of feedback delivered by tutors to dental students and vice versa has been well documented and the issues related to these aspects of feedback continue to fire the imagination of researchers [1,2]. These issues are complicated by the fact that there are multiple definitions of feedback based upon: 'an individual's performance during a task' [3]; a process 'bridging the gap between what is known and what should be known' [4]; and the nurturing of 'an appropriate setting and

interpersonal climate within which to deliver feedback' [5].

The COVID-19 pandemic has had a significant impact on the teaching delivered to both undergraduate and postgraduate dental students since March 2020 [6]. The closure of dental schools, within university settings, due to the pandemic, had resulted in a deferral of clinical skills teaching and patient based clinical learning. Lectures and seminars have moved from a Face-to-Face environment to online teaching sessions, where tutors have attempted to deliver the knowledge essential for students to develop their skills as required by the curriculum. Many

\* Corresponding author.

E-mail address: [p.fine@ucl.ac.uk](mailto:p.fine@ucl.ac.uk) (P.D. Fine).

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universities have had to modify their assessment processes because of the pandemic [7], leading to online assessments including open book timed assessments [8]. The implementation of no detriment policies on assessments has reflected the anxiety dental institutes have experienced in facing these challenges [9].

The impact of the pandemic has had potentially adverse effects on the education of dental students [10]. Whilst the long-term significance of this is unknown, it has been reported that the earlier the students were in their programme of study the more negative the impact they were likely to experience because of the changes in teaching and learning during the pandemic [11]. Students in their early years of study have significantly more emotional health concerns compared to their final year counterparts [12]. Students perceiving a negative impact of school closure were more likely to report the following concerns relating to: (i) emotional health, (ii) social connection, and (iii) greater risk of contracting COVID-19 while attending classes and moving around in the school buildings [12].

In contrast Patel and Taggar [13] reported that senior medical students perceived “ongoing delivery of high-quality primary care education using virtual small group teaching, and that there was no attrition in student experience when compared to face-to-face teaching delivered before COVID-19 for the same learning outcomes”. The delivery of feedback during the pandemic, to both undergraduate and postgraduate students, is an important issue for student learning if teachers are to continue to have a positive influence on students’ professional development [14].

The fundamental role of feedback in clinical dental education is to offer practical advice to improve student performance [15]. The benefits of feedback include, amongst other things, increased student confidence, motivation and self-esteem [16]. It also enhances the development of clinical skills based on observations of behaviour [17]. In delivering the above, teachers also benefit from enhanced interpersonal skills and a sense of personal satisfaction [15].

The pandemic has had a significant effect on student learning and performance, which influences feedback delivered to students to match student learning to achieve the desired level of performance for the benefit of their patients [18,19]. A recent publication before the pandemic indicated that students were very keen to receive constructive feedback from tutors to progress their learning and to support their future progress. Students from across Europe and beyond have similar thoughts about the delivery, content, and frequency of feedback from tutors [1]. The mode of feedback delivery and the relevance of feedback to dental students who may feel isolated and anxious about their progress has been reported to have changed because of the pandemic [20]. These authors considered a shared and collaborative approach towards feedback involving undergraduate dental students contributing to a smooth transition between previous teaching and that necessary due to the pandemic [20].

Dental students have been asked for their views regarding measures that have been put in place to continue with delivering teaching during the pandemic [21], but there is little evidence to date to show that tutors have made any changes in their delivery of feedback to students. Students’ feedback on attempts to fill the disparity in the practical training was negative throughout undergraduate training [21]. Studies from Germany [22] and India [23] reported comparable findings with students anxious to return to traditional teaching methods. Students in the Indian study [23] not only highlighted how they wished a return to face-to-face teaching but also issues with some students not being able to access information technologies such as those living in rural areas. Medical and dental students have reported that the changes made by tutors to teaching pedagogy because of the pandemic have been well received [21].

This study aimed to investigate the impact of the COVID-19 pandemic on how tutors delivered feedback to their undergraduate and postgraduate dental students.

## 2. Materials & methods

This study used a mixed method design, where quantitative data were collected via an online questionnaire and qualitative data through focus group discussions. A bespoke questionnaire was designed [24] to collect data from European dental teachers’ perceptions of delivering feedback to undergraduate and postgraduate dental students in European dental schools during the COVID-19 pandemic. Part 1 of the questionnaire enquired about demographic information of the teachers; Part 2 explored their feedback practices during the COVID-19 pandemic. Part 3 explored teachers’ plans on how they would deliver feedback to students in the future. The questionnaire was delivered online via Google Forms to registrants of the Association for Dental Education in Europe (ADEE) annual conference in 2021.

Qualitative data were generated and collected during focus group discussions held as part of a workshop at the 2021 ADEE conference. Each delegate was randomly and evenly allocated one of four focus groups by administrative staff from ADEE. Each focus group was assigned a specific aspect of feedback during the pandemic derived from analysis of the questionnaires. These included: (i) style of feedback delivered; (ii) type of feedback following assessments; (iii) quantity of feedback delivered and (iv) use of technology to deliver feedback. Each focus group was facilitated by an experienced researcher (the authors) and appointed a voluntary raconteur to summarise the findings to the entire group. The individual focus groups were not recorded to allow participants to express their views freely and to ensure the anonymity of the participants. Each facilitator and raconteur compiled handwritten notes to help reporting their discussions to the whole group. Each set of notes was transcribed into a Word document for analysis by the authors with the identity of the participants anonymised.

Analysis of quantitative data was undertaken using descriptive statistics and qualitative data were analysed using a narrative approach [25,26].

## 3. Results

The questionnaire was sent to 258 conference participants. 67 questionnaire responses were received which represented a 26% response rate. Respondents came from 12 different countries both within Europe and beyond and reported having a variety of different roles in their dental schools (Fig 1.)

The majority of respondents indicated that the method of delivery of feedback to students had changed during the pandemic (77.6%;  $n = 52$ ). A minority of respondents (16.4%;  $n = 11$ ) reported no change in the method of feedback delivery (Fig. 2).

Only one in five respondents reported delivering less feedback to their students during the pandemic; the majority either maintained or indeed increased the amount of feedback they delivered to their students (Fig. 3).

A substantial number of respondents indicated a move towards

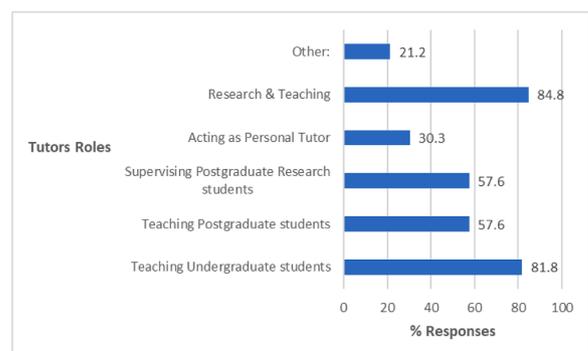


Fig. 1. Illustrating the roles occupied by tutors.

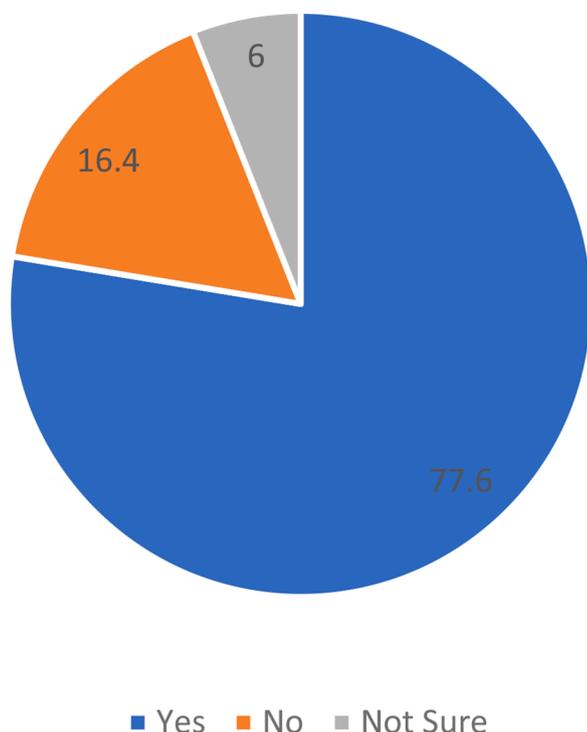


Fig. 2. Has the COVID-19 pandemic changed the way teachers deliver feedback to students?.



Fig. 3. Illustrating whether the quantity of feedback delivered by teachers changed during the pandemic.

delivering feedback via a web-based virtual learning environment as a result of the COVID-19 pandemic (76.1%;  $n = 51$ ). This was understandably contrasted by 65.7% ( $n = 44$ ) of respondents who indicated that less feedback was delivered face to face (Fig. 4).

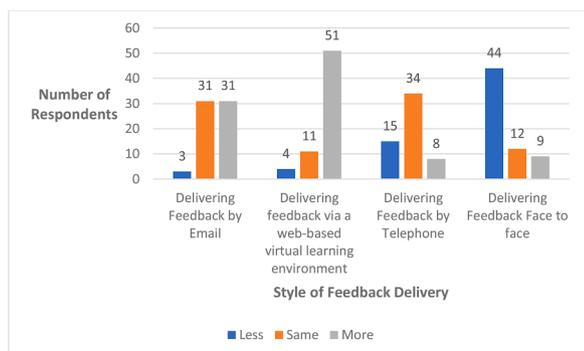


Fig. 4. Illustrating changes in Style of Feedback Delivery during the pandemic.

#### 4. Qualitative results

Qualitative data were collected from the four focus groups. Approximately 40 participants from European countries and the rest of the world participated online.

Focus Group 1 discussed the style of feedback delivered, including the need for smaller groups of students to facilitate teaching, although for some no changes to clinical teaching were reported. There was a strong need for students to be self-motivated during the pandemic and to develop skills in self-directed learning more so than pre-pandemic. This seemed to be more successful when problem-based learning principles were introduced by some schools as a result of the pandemic. The importance of ongoing dialogue with students was emphasised to prevent students' disengagement. The role of feedback was considered to be more important than pre-pandemic as a crucial channel to deliver new clinical knowledge to the students.

Focus Group 2 considered how feedback was delivered following both formative and summative assessment methods. Some participants from schools where a less student-centred approach was normally taken reported an increased and more focused dialogue with students when discussing the outcomes of their formative assessments. This group agreed on the importance of greater engagement with students when discussing their assessment scores. However, it was emphasised that cultural differences between countries could have influenced this approach. Participants reported that the computer screen and the physical distance between teachers and students could be perceived as a barrier to communication for some students, particularly when the teachers were delivering feedback to them regarding their understanding and performances.

Concerning summative assessments, the participants appreciated the time-consuming nature of delivering detailed feedback to students and recognised its importance in facilitating student learning. Reference was made to the practical nature of dental education requiring physical attendance at both simulation sessions and patient clinics, where direct face-to-face feedback could be delivered. Developing good quality student reflection was also seen as part of the feedback process [27,28].

Focus Group 3 discussed the quantity of feedback delivered during the pandemic and identified concerns relating to students' anxieties about having to study remotely from home and often in an isolated fashion. The teachers felt that one approach to allay student concerns was to increase the individual feedback they delivered. However, some delegates indicated that they had delivered less feedback to their students during the pandemic due to the technological challenges of working remotely. Some participants reported that the introduction of blended learning had been well received by students, despite the increased reliance on technology and the changes in learning and teaching behaviours.

Despite universally recognising that the pre-pandemic gold standard for delivering feedback to students was face to face, teachers reported accepting the hybrid approach adopted during the pandemic most likely becoming the norm after the pandemic has passed.

Focus Group 4 considered the influence of technology on feedback practices and most participants reported that students were comfortable with virtual and remote communication. It was broadly recognised that the pandemic had accelerated the adoption of these new virtual methods of communication, which would otherwise have taken longer to achieve. The participants reported limitations with remote learning technologies for clinical disciplines which require face to face simulation and patient-based activities. Another downside reported was the perceived expectation amongst the students that teacher would need to be constantly available to them. The need for regular face-to-face human interaction was considered vital to deliver effective feedback and enhance student learning despite advances in contemporary remote communication technologies.

In summary, the four randomly assigned focus groups each constituted a diverse number of delegates from around the world. The

overwhelming observation across all the focus groups, despite the country of origin of the participants, was that the challenges faced, and solutions developed were very similar. The use of small groups for teaching and delivering feedback to students, was a common theme as was the requirement to return to traditional clinical teaching and feedback delivery as soon as possible. Although most participants reported delivering the same amount of feedback to students, a significant proportion reported delivering more feedback, than before the pandemic. There were also changes to the style of feedback delivered.

## 5. Discussion

This study investigated feedback practices delivered by teachers to dental students during the COVID-19 pandemic throughout the 2020–21 academic year. It identified changes in academic practice and the impact on feedback delivered to students and determined whether these changes are sustainable or at risk of further modification in the longer term.

A majority of respondents reported that they had changed the way they delivered feedback to their students, indicating a willingness to change their feedback practices as a result of the pandemic. Teachers were keen to continue to deliver feedback to their students despite the challenges presented by the pandemic, using all potential means to help students progress with their studies [19].

Respondents perceived the pandemic as an opportunity to explore other means of delivering feedback, using technology, which was hitherto not fully investigated before the pandemic, thereby accelerating changes that would otherwise have taken many years to achieve. It was unsurprising that feedback delivered by email or other web-based learning platforms increased, whilst face to face feedback was greatly reduced following the enforced decline in traditional teaching methods for dental students. This is consistent with the reduction in face-to-face teaching of all students during the pandemic and was predictable given the changes to teaching pedagogy [9]. The challenges of delivering teaching and feedback to students have been described and additionally reported by Morrison-Smith and Ruiz [29] who referred to five different influencing factors, namely ‘geographical distance, temporal distance, perceived distance, the configuration of dispersed teams, and diversity of workers’ [29].

The changes to teaching pedagogy and the need to develop new areas of expertise, as reported in this study, supported the concept of students becoming self-directed learners [30,31] on a larger scale. However, self-directed learning does not equate to students needing to be isolated or individualised. ‘Learners can work in self-directed ways while engaged in group-learning settings, provided that this is a choice they have made believing it to be conducive to their learning efforts’ [32]. Self-directed learning together with an increased degree of self-motivation [33], need to be supported by an increased level of high quality feedback from teachers to dental students [28].

The increase in feedback delivered during the pandemic highlighted the mentoring role that respondents perceived was important in their capacities as teachers when many students were at higher risk of isolation and anxiety. Although mentoring is a role that some teachers of medical and dental students may find challenging, its benefits have been clearly reported [34].

The COVID-19 pandemic has precipitated an unprecedented increase in the use of online platforms. Dental teachers have become more proficient at arranging virtual teaching sessions requiring the online sharing of images to a virtual audience, using a variety of dedicated software programmes. However, teachers reported that dental students have become disenchanted with being taught via online platforms and yearn for the opportunity to return to the actual classroom. Challenges of learning at home included internet connection problems, the inability to focus and maintain motivation [35]. Prolonged periods spent in front of a computer screen, whilst attending online seminars and classrooms for virtual teaching sessions have a detrimental impact on students’ mental

health, increasing levels of stress and anxiety [36].

This study suggested that dental education in Europe and beyond has reacted relatively well to the pandemic in 2021. This contrasts with Quinn et al., [6] who reported in the early stages of the pandemic that over one third of dental schools in Europe had no plans whatsoever for COVID specific support for their students who would be left to their own devices. This improvement over time is encouraging, however, the longer-term impact on dental student education, particularly on aspects such as communication skills [37] and confidence [16], remain unclear.

Despite the relatively low response rate in this study, it was reassuring to note that the respondents were from a diverse range of countries indicating a broad representation from Europe and beyond. The respondents had a wide range of roles within their schools, which ensured a broad academic representation. One limitation of the study is the self-selected nature of the participating teachers, who attended the ADEE special interest group on student feedback, thereby introducing the risk of an element of bias in their responses. This limitation was mitigated by using a mixed-method approach to the study, triangulating the findings. An element of ‘insider researcher’ [38] is also noted, as the authors are members of ADEE. However, the authors’ specialist educational knowledge and experience facilitated ‘easier access (to) and greater rapport (with)’ [38] the respondents, allowing the detail of the issues to be identified and investigated in the widest possible context.

## 6. Conclusions

Feedback remains an essential part of the education of undergraduate and postgraduate dental students. The COVID-19 pandemic has enforced rapid changes to the delivery of feedback by teachers to dental students, which could pave the way for a more positive, inclusive, individualistic and effective model for delivering feedback now and in the future, despite the likelihood that teaching in dentistry will never be the same again.

## Credit author statement

All authors declare that this is an original piece of research and has not been published elsewhere or is not being submitted for publication to any other journal.

Dr Peter Fine: UCL Eastman Dental Institute, London UK

Professor Albert Leung: UCL Eastman Dental Institute, London UK

Professor Chris Louca: University of Portsmouth, Portsmouth, UK

Dr Ingrid Tonni: University of Brescia, Brescia, Italy

## Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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## References

- [1] A. Leung, P. Fine, R. Blizard, I. Tonni, C. Louca, Teacher feedback and student learning: a quantitative study, *Eur. J. Dent. Educ.* 25 (2020) 600–606.
- [2] A. Rung, R. George, A systematic literature review of assessment feedback in preclinical dental education, *Eur. J. Dent. Educ.* 25 (2021) 135–150.
- [3] Oxford English Dictionary, 3rd Edition, Oxford University Press.
- [4] J. Hattie, H. Timberley, The power of feedback, *Rev. Educ. Res.* 77 (1) (2007) 81–112.
- [5] J.D. Thomas, R. Arnold, Giving feedback, *J. Palliat. Med.* 14 (2) (2011). *Clinician Educator Series.*

- [6] B. Quinn, J. Field, R. Gorter, I. Akota, M.C. Manzanara, C. Paganelli, J. Davies, J. Dixon, G. Gabor, R.A. Mendes, P. Hahn, S. Vital, J. O'Brien, D. Murphy, S. Tubert-Jeannin, COVID-19: the immediate response of European academic dental institutions and future implications for dental education, *Eur. J. Dent. Educ.* 24 (4) (2020) 811–814.
- [7] K. Khalaf, M. El-Kishawi, M. Moufti, S. Al Kawas, Introducing a comprehensive high-stake online exam to final-year dental students during the COVID-19 pandemic and evaluation of its effectiveness, *Med. Educ. Online* 25 (1) (2020).
- [8] L. Elsalem, N. Al-Azzam, A. Jum'ah, N Obeidat, Remote E-exams during COVID-19 pandemic: a cross-sectional study of students' preferences and academic dishonesty in faculties of medical sciences, *Ann. Med. Surg.* 62 (2021) 326–333.
- [9] C. Deery, The COVID-19 pandemic: implications for dental education, *Evid. Based Dent.* 21 (2) (2020) 46–47, <https://doi.org/10.1038/s41432-020-0089-3>, 2020 Jun.
- [10] M. Hassan, H Amer, Dental education in the times of COVID-19 pandemic: challenges and recommendations, *Font. Med.* 8 (2021), 648899, <https://doi.org/10.3389/fmed.2021.648899>.
- [11] A. Singal, A. Bansal, P. Chaudhary, H. Singh, A. Patra, Anatomy education of medical and dental students during COVID-19 pandemic: a reality check, *Surg Radio Anat.* 43 (4) (2021) 515–521. Apr.
- [12] M. Hung, F.W. Licari, E.S. Hon, Su E Lauren, W.C. Birmingham, L.L. Wadsworth, J. H. Lassetter, T.C. Tyler, W. Graff, W.B. Harman, M.S Carroll, In an era of uncertainty: impact of COVID-19 on dental education, *J. Dent. Educ.* 85 (2) (2021) 148–156.
- [13] B. Patel, J.S. Taggar, Virtual teaching of undergraduate primary care small groups during COVID-19, *Educ. Prim. Care* (2021), <https://doi.org/10.1080/14739879.2021.1920475>.
- [14] E. Tricoli, S De Pasque, The role of feedback in learning motivation, *Adv. Motiv. Achiev.* 19 (2016) 175–202.
- [15] M.P. Clynes, S.E. Raftery, Feedback: an essential element of student learning in clinical practice, *Nurse Educ. Pract.* 8 (6) (2008) 405–411.
- [16] P. Fine, A. Leung, C. Bentalls, C. Louca, The impact of confidence on clinical dental practice, *Eur. J. Dent. Educ.* 23 (2) (2019) 159–167.
- [17] P. Anderson, Giving feedback on clinical skills: are we starving our young? *J. Grad. Med. Educ.* 4 (2) (2012) 154–158.
- [18] S. Hattar, A. AlHadidi, F.A. Sawair, A.A. Alraheam, A. El-Ma'aita, F.K. Wahab, Impact of COVID-19 pandemic on dental education: online experience and practice expectations among dental students at the University of Jordan, *BMC Med. Educ.* 21 (2021) 151, <https://doi.org/10.1186/s12909-021-02584-0>.
- [19] S.R. Shrivastava, P.S. Shrivastava, Role of feedback in the feed-forward of undergraduate medical students, *Res. Dev. Med. Educ.* 7 (2) (2018) 62–63.
- [20] Mehta, End, Kwan, Bernstein & Law, Adapting medical education during crisis: student–faculty partnerships as an enabler of success, *Med Teach.* (2020), <https://doi.org/10.1080/0142159X.2020.1811215>.
- [21] G. Varvara, S. Bernardi, S. Bianchi, B. Sanjari, M. Piattelli, Dental education challenges during the COVID-19 pandemic period in Italy: undergraduate student feedback, future perspectives, and the needs of teaching strategies for professional development, *Healthc. Open Access* 9 (4) (2021) 454. Vol.
- [22] M.A. Schlenz, A. Schmidt, B. Wöstmann, N. Krämer, N. Schulz-Weidner, Students' and lecturers' perspective on the implementation of online learning in dental education due to SARS-CoV-2 (COVID-19): a cross-sectional study, *BMC Med. Educ.* 20 (2020) 354. Vol.
- [23] K.J. Shrivastava, R. Nahar, S. Parlani, V.J. Murthy, A cross-sectional virtual survey to evaluate the outcome of online dental education system among undergraduate dental students across India amid COVID-19 pandemic, *Eur. J. Dent. Educ.* 26 (1) (2021) 123–130. Feb.
- [24] A. Artino, J. La Rochelle, K. Dezee, H Gehlbach, Developing questionnaires for educational research: AMEE Guide 67, *Med. Teach.* 36 (2014) 463–474. Vol.
- [25] Hayes A. Descriptive statistics. Corporate finance and accounting. Investopedia. (2021) Hayes, A. (2021). Debt ratio definition (20 September 2021), Investopedia, <https://www.investopedia.com/terms/d/debratio.asp> In International Journal of Academic Research in Business and Social Sciences, Vol 11(9).
- [26] M. Savin-Baden, C. Howell Major, Qualitative Research. The Essential Guide to Theory and Practice, Routledge, New York, London, 2013.
- [27] B. Davies, A. Leung, S. Dunne, J. Dillon, I Blum, Bespoke video vignettes - an approach to enhancing reflective learning developed by dental undergraduates and their clinical teachers, *Eur. J. Dent. Educ.* 21 (1) (2017) 33–36.
- [28] B. Davies, A. Leung, S Dunne, So how do you see our teaching? Some observations received from past and present students at the Maurice Wohl dental Centre, *Eur. J. Dent. Educ.* 16 (3) (2012) 138–143.
- [29] S. Morrison-Smith, J. Ruiz, Challenges and barriers in virtual teams: a literature review, *SN Appl. Sci.* 2 (2020) 1096, <https://doi.org/10.1007/s42452-020-2801-5>.
- [30] M. Knowles, Self-Directed Learning: A Guide For Learners and Teachers, ERIC, 1975.
- [31] S. Loeng, Self-directed learning: a core concept in adult education, *Educ Res. Int.* (2020), <https://doi.org/10.1155/2020/3816132>. Article ID 3816132.
- [32] B.S.R. Maclean, D. Wilson (Eds.), International Handbook of Education for the Changing World of Work, Springer Science Business Media B.V, 2009, [https://doi.org/10.1007/978-1-4020-5281-1\\_XV.7](https://doi.org/10.1007/978-1-4020-5281-1_XV.7).
- [33] A. Bandura, Social Foundations of Thought and Actions: a Social Cognitive Theory, Prentice Hall, London, Englewood Cliffs, NJ, 1986, pp. 390–453.
- [34] T. Stenfors-Hayes, H. Hult, L.O Dahlgren, What does it mean to be a mentor in medical education? *Med. Teach.* 33 (8) (2011) e423–e428, <https://doi.org/10.3109/0142159X.2011.586746>.
- [35] S. Nadeem, S. Inam, U. Hayat, S. Imran, Z. Saga, Virtual reality: medical students' thoughts and perspectives on the pandemic and chaos: a Twin city survey, *Res. Sq.* (2021), <https://doi.org/10.21203/rs.3.rs-677304/v1>.
- [36] Mheidly N., Fares M., Fares J. Coping with stress and burnout associated with telecommunication and online learning. *Frontiers in Public Health*, 11 November 2020, Vol 8, doi:10.3389/fpubh.2020.574969.
- [37] F. Krause, D. Ziebolz, K. Rockenbauch, R. Haak, G. Schmalz, A video- and feedback-based approach to teaching communication skills in undergraduate clinical dental education: the student perspective, *Eur. J Dent Educ.* 00 (2021) 1–9, <https://doi.org/10.1111/eje.12682>.
- [38] J. Mercer, The challenges of insider research in educational institutions: wielding a double edge sword and resolving delicate dilemmas, *Oxf. Rev. Educ.* 33 (1) (2007) 1–17.