Need for Assessment of MDS Paper I Examination at the End of the First Year of MDS: A Survey

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Abstract

Introduction: Pursuant to the notification published by Dental Council of India, dated May 17, 2018, no. DE-14-MDS-2018/2131, the committee amended the regulation on postgraduate (PG) Masters of Dental Surgery (MDS) students and made provision of giving MDS paper I at the end of the first year. Assessment of this survey will provide clear information between the responses of PG students and teachers. The focus of this article is to report and discuss the characteristics of new learning process.

Material Method: A total of 150 sample sizes and 50 PG teachers were included. Questions were generated using Google Form to gain access and establish rapport with participants and to obtain open, honest understanding of the participants’ “learning experience.” The link was sent to the participants, using emails or WhatsApp number.

Result: The analysis of survey data was carried out using Likert scale. The comparison of mean scores was carried out using unpaired t-test. Figures 1 to 10 provide responses of participants.

Conclusion: Postgraduate students and PG guides are neutral toward the initial protocol of examination. The participants have a positive attitude toward new framework. But curriculum activities such as library dissertation (LD), dissertation selection, and patient work get disturbed somewhere. It might take time for both students and guides to get familiar with the new framework.

Keywords
Orthodontic, postgraduate study, exam technique (PG)

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Introduction

Pursuant to the notification published by the Dental Council of India (DCI), dated May 18, 2018, no. DE-14-MDS-2018/2131, the committee amended the regulation on postgraduate (PG) Masters of Dental Surgery (MDS) students. It became mandatory for PG students to appear for the first paper (Basic Sciences) at the end of the first year of MDS program.

The importance of providing quality education has been recognized for a long time, but perhaps it has never been more than present. This article aims at assessing the need to conduct paper I at the end of first-year MDS. According to the initial protocol, the examination was conducted at the end of first-year MDS. There are many views of interest among the students as well as teachers about the current protocol. This created a wave of confusion among all the postgraduate students and their respective guides in all the PG institutes under DCI. This system of framework needs to be more open and transparent so that the standard and procedures of framework assessment become clearer among all. Studies suggest that students’ perceptions should be considered in any discussion of their education.¹,²

The consensus opinion in the dental education literature is that teacher’s and student’s feedback on their learning experiences should inform all discussion and decisions relating to the education.³-⁶ Researchers interested in eliciting students’ feedback emphasize that attention to “student’s voice” is important because they have distinctive perspectives of teaching and learning, which can offer in-depth information.⁷-¹⁰ Attention of this survey was to assess the
perception of students and their respective guides regarding the conduction of examination (paper I) at the end of first-year MDS program. Though this protocol was not new to the Indian system, this was implemented in certain universities some 5 to 6 years before and later was withdrawn for unknown reasons. But now, for the past 2 years, conducting basic science paper examination at the end of the first year is being validated all over India.

It is important to assess and analyze teachers and students’ suggestions about whether the new system will add more merits than the initial protocol of conducting examination. There is limited literature on PG student learning and the existing quality of dental education. Although there are limitations with both the systems, there is a need to assess merits and demerits to understand what benefits the proposed system will bring and whether it will work well with the students and PG guide.

The purpose of our evaluation was not only to identify strengths and weaknesses in current assessment but to offer recommendations for modification regarding the same. The focus of this article is to report and discuss about different perspectives of both teachers and students about various foci of interest of the newly formed rules.

Materials and Methods

The study was approved by the institutional review committee. A cross-sectional questionnaire-based study was conducted among the various PG students who have been exposed to this new curricular pattern that is to appear for the basic science paper at the end of their first year and PG guides who have been associated with both the types of protocols of various dental colleges through an e-survey using Google Forms.

Study Population and Sampling Technique: A list of PG dental colleges was obtained from the DCI website. A list of email addresses of all the PG students and teachers was collected through convenience sampling. Though stratified sampling method based on zones should have been an ideal choice, convenience sampling method was used.

Sample size was calculated using EpiInfo software based on finite population, where 239 PG dental institutions with approximately 25 PG students in each institution were considered. The final sample size estimated was 400, where 300 PG students and 100 teachers were included.

To estimate the sample size, a power analysis was performed, taking finite population into consideration.

Sample size was calculated using the formula for prevalence in finite population.\(^{11}\)

\[
n' = \frac{N \times Z^2 \times P \times (1 - P)}{d^2 \times (N - 1) + Z^2 \times P \times (1 - P)}
\]

where

\(n'\) = sample size with finite population correction;
\(N\) = population size;
\(Z\) = \(Z\)-statistic for a level of confidence (1.96);
\(P\) = expected proportion (in proportion of one);
\(d\) = allowable error (0.05); and
\(n = 5975 \times (1.96)^2 \times 0.50 (1 - 0.50)
\)

Rounded off to 400.

A total sample size of 400 was calculated for the survey.

Study Tools and Data Collection: A questionnaire was framed to establish rapport with participants and to obtain open, honest opinion of the participants regarding “learning experience.” Lawshe’s method\(^{12}\) was used for content validity, using judgments from a panel of 10 subject matter experts (SMEs). The reliability was also established by test–retest among 20 volunteers of a similar population.

The kappa value was 0.9, which indicated high reliability. This was followed by pilot testing among 10 volunteers who were asked to answer the questionnaire and provide feedback on content, clarity, and brevity of the questionnaire.

Checkboxes were provided, and participants had to click on any one option for each question. Care was taken that one person could answer the questionnaire only once, and all questions were mandatory. Efforts were made to get completed forms by sending three reminders via emails. The responses were directly recorded through Google Forms. Since this was an e-survey, the informed consent was included in the Google Form. Study duration was of 3 months.

Statistical Analysis: The online recorded information was converted into codes and analyzed, using Statistical Package for Social Sciences (SPSS) Version 26 software package (IBM Corp., Armonk, NY). Confidence intervals were set at 95% and values of \(P < .05\) were interpreted as statistically significant. Chi-squared test was applied to compare responses of PG students and teachers.

The following questions were included:

1. Does finishing basic paper in the first year help to concentrate more on individual specialized subjects?
2. Does this pattern help in the complete understanding of the basic subject?
3. Is there adequate time for preparation for the examination?
4. Is there any pressure in the performance and in passing the examination with a high score?
5. Is allowed to keep terms (ATKT) necessary?
6. Will preparation leave hamper the PG activity?
7. Does it affect your curriculum activity like library dissertation and main dissertation selection?
8. Does it affect quality of patients work?
9. Is there need for taking examination in first-year MDS?
10. Was the initial protocol of conducting examination better?
All the participants used 5-point scale, that is, the Likert scale for the response which includes:

1. Strongly agree;
2. Agree;
3. Neutral;
4. Disagree; and
5. Strongly disagree.

The link was sent to the participants using emails or WhatsApp number. All the individuals were requested to enter their Mail ID. The student could fill the form only once so that the first-instinct perspectives of the individual were taken into consideration notice in the study.

Result

After collection, the data have to be processed and analyzed in accordance with the outline laid down for the purpose at the time of developing the framework. Analysis of survey data using Likert scale shows that respondents were active to participate, and all of them answered all the questions. Survey details are presented in Table 1 as percentage, and Table 2 presents the comparison of mean scores using unpaired t test. Figures 1 to 10 provide responses of both students and PG guides in detail for individual questions.

Table 1. Likert Scale Participants’ Response in Percentage.

| Question | PG Guide Response (%) | PG Students’ Response (%) |
|----------|------------------------|---------------------------|
|          | SD D N A SA            | SD D N A SA               |
| 1        | 2 6 6 22 64            | 53 10 16 44 77            |
| 2        | 4 2 10 24 60           | 5.3 7.3 26.7 44.7 16     |
| 3        | 0 8 6 52 34           | 2 28.7 14 35.3 20        |
| 4        | 2 40 26 8 24          | 2 18.7 21.3 46 12        |
| 5        | 12 24 18 40 6        | 0 3.3 18.7 78 0          |
| 6        | 22 10 10 42 16       | 2 17.3 7.3 59.3 15.3     |
| 7        | 0 8 6 52 34          | 2 28.7 14 35.3 20        |
| 8        | 2 44 10 34 10        | 1.3 2.7 29.3 46 20.7     |
| 9        | 2 4 10 18 66         | 3.3 27.3 10.7 42 16.7    |
| 10       | 2 26 28 16 28        | 5.3 19.3 15.3 43.3 16.7  |

Postgraduate guides and students both have similar views on these aspects revealing the positive response to ward’s concentration on individual subjects in the subsequent year after completion of the first year of basic paper ($P = .001^*$; Table 1 and Figure 1).

Postgraduate guides and students both have a similar belief that this framework will enrich better understanding of the basic subject ($P = .029^*$; Table 1 and Figure 2).

Here, there are slightly different assumptions. According to PG guides, time is sufficient, and for PG students, they are neutral ($P = .008^*$; Table 1 and Figure 3).
Table 2. Comparison of Mean Scores.

| Sr No | Question                                                                 | Mean Scores | t-Value | P-value |
|-------|--------------------------------------------------------------------------|-------------|---------|---------|
| 1     | Finishing basic paper in the first year will help on concentrating on individual specialized subjects later | 4.40 (0.99) | 4.00 (0.84) | 2.569 .012* |
| 2     | Does this pattern help to increase understanding for basic subject?       | 4.34 (1.02) | 3.59 (1.02) | 4.527 .001* |
| 3     | Is there adequate time for preparation of examination?                   | 4.12 (0.85) | 3.43 (1.16) | 4.534 .001* |
| 4     | Is there any pressure in performance for passing the exam with a high score? | 3.12 (1.24) | 3.47 (0.99) | -1.829 .072 (NS) |
| 5     | Is there necessity for ATKT for the continuation of second year MDS?     | 3.04 (1.18) | 3.75 (0.51) | -4.119 .001* |
| 6     | Will preparation holiday hamper PG activity?                            | 3.20 (1.43) | 3.71 (0.95) | -2.372 .021* |
| 7     | Does it affect other curriculum activity like LD and dissertation selection? | 4.12 (0.85) | 3.43 (1.16) | 4.534 .001* |
| 8     | Does it affect quality of patient’s work?                               | 3.06 (1.13) | 3.82 (0.84) | -4.366 .001* |
| 9     | Is there need for taking examination in the first year of MDS?          | 4.42 (0.97) | 3.41 (1.15) | 6.046 .001* |
| 10    | Was the initial protocol of conducting examination better?              | 3.42 (1.21) | 3.47 (1.14) | -0.247 .805 (NS) |

Note: Unpaired t-test; * indicates significance at P ≤ .05; and NS: non-significant.

Aspect for this outcome is neutral for both participants. This propaganda is particularly important for our study because it reflects the continuous stress the students experience to go through exams with higher scores to a greater extent that it tends to ignore the remaining activities of the PG curriculum, which are important during that particular quantum of time.

This was predominantly carried out to evaluate the psychological aspects of students who were to take up the examination.

As this gives due importance to the mental health and well-being of students on a priority basis (P = .146*; Table 1 and Figure 4).

Postgraduate students agreed that ATKT factor was necessary for its continuance in the second year as the subject group that was chosen was from the first year of MDS specifically according to our study. Postgraduate guides have neutral responses with the above factor according to our survey (P = .008*; Table 1 and Figure 5).

Preparation holiday might affect PG activity as PG students agree, and PG guides are neutral (P = .008*; Table 1 and Figure 6).

Postgraduate guide and PG student having similar learning experience. New framework has affected curriculum activity like LD and dissertation selection somewhere although selection is carried out in the initial 4 to 6 months.

Library dissertation work has to be carried out by the end of the first year by the student because it has to go, further,
through multiple analysis by the PG guide. Also, activities like seminar and journal club presentation do occupy a lot of time in their preparation in conjugation with LD. It does have a negative effect on the time available for the students, hampering their study time to a certain extent ($P = .004^*$; Table 1 and Figure 7).

The new framework may affect the quality of patient work. Postgraduate students agreed, but PG guides are neutral ($P = .001^*$; Table 1 and Figure 8).

Postgraduate guides have a positive attitude toward the new framework, and PG students are neutral ($P = .001^*$; Table 1 and Figure 9).

Postgraduate guides and students are neutral toward the initial protocol of the examination ($P = .054^*$; Table 1 and Figure 10).

Perceptions of effective and ineffective learning experiences were similar across both groups of participants. Close attention to students’ perspectives on their learning environment may be useful for informing professional development programs. The aim of this framework was not to evaluate the importance of understanding of the basic science paper but also to highlight the need to increase supervision on other curriculum activities, practice skill, promote interactive learning, and critical thinking.

![Figure 6](image6.png)

**Figure 6.** Does Preparation Holiday Hamper PG Activity?

*Note:* PG: Postgraduate.

![Figure 7](image7.png)

**Figure 7.** Effect on Curriculum Activity Like LD and Dissertation Selection.

*Note:* PG: Postgraduate.

![Figure 8](image8.png)

**Figure 8.** Quality of Patient Work.

*Note:* PG: Postgraduate.

![Figure 9](image9.png)

**Figure 9.** Taking Examination in the First Year of MDS.

*Note:* PG: Postgraduate.

![Figure 10](image10.png)

**Figure 10.** Initial Protocol of Conducting Examination.

*Note:* PG: Postgraduate.
Discussion
Till date, there has been a lack of qualitative research on PG students and their respective teachers’ learning experiences, particularly in India. This study was unique in its attention that evaluates the perception of both current PG students and PG teachers in dental education. Different opinions had emerged from participants’ perspective regarding compulsion of examination at the end of the first year of MDS.

This framework of survey provided clear connection between responses of PG students and their respective teachers through online Google Form. The focus of this article was to highlight the difficulties that students encountered during patient work and other academic activities in correspondence with the stress of examination during the first year of the PG program. This framework could therefore also provide a way forward for its development.

Perception of effective and ineffective learning experiences were largely similar across both the groups (students and teachers). This could likely reflect their preexisting assumptions, needs, preferences, beliefs, and values about their education. The framework of 10 questions and outcome results are presented in Table 1 and Figures 1 to 10.

Level of Knowledge and Attitude Toward New Framework. Postgraduate teachers and students revealed a positive response toward finishing basic paper in the first year that would then help in concentrating on individual specialized subjects later and would help in increasing the understanding of the basic subject.

Quality of Education. Most of the participants agreed on the time span provided for the preparation and the passing of the examination with a high score. This indicated that the quality of PG education would be maintained. Both PG teachers (77%) and PG students (89%) showed similar opinion of getting a second chance and need for ATKT to pass the examination.

Mission of Curriculum Activity. Although preparation holiday helps in better preparation for the examination, the workload and patient’s related work would increase during that period and hence preparation holiday would be a break in the curricular activity—both PG teachers and students agreed to it. The new framework has affected the curriculum activity such as library dissertation, dissertation selection, and quality of patient work somewhere.

Educational Structure. Both PG teachers (62%) and students (60.7%) had a positive attitude toward taking up the examination in the first year of MDS as it helped to concentrate on the individual subjects later. Postgraduate students (64%) and PG teachers (72%) were neutral toward the initial protocol of examination. Orthodontic education is pretty varied across the country although the DCI recommended that the curriculum provides a common platform nationwide.

The standards and quality of training might range from bare minimum to pretty advanced, and perhaps, we are dealing with an audience with different expectations and different levels of training. Perceptions of effective and ineffective learning experiences were similar across both groups of participants, but there was difference in opinion in some aspects. Close attention to student’s perspectives on their learning environment may be useful in informing professional development programs. The aim of this framework was not to evaluate the importance of understanding of basic science paper but also to highlight the need to increase supervisions on other curriculum activities, practice skill, promote interactive learning, and critical thinking.

Limitations
The limitation of the study was that zonal response of the students as well as teachers were not collected and evaluated. Furthermore, effects on seminar and journal club presentations were not included in the study. Although the study findings cannot be generalized to every PG students and teachers, it may be useful for promoting future studies and the students’ outlook toward the new framework.

Conclusion
This survey identified specific proposals that might be considered by education providers and organizers. Data revealed that the framework and outcomes would benefit from wider audience at this stage. In this spirit, this framework helped to identify gaps and outcomes to guide their curriculum activity planning. Postgraduate students and PG teachers are neutral toward the initial protocol of examination. Participants have positive attitude toward the new framework of taking up the examination in the first year of MDS and rising importance of basic science at the same time, concentrating more on specialized subjects later. But curriculum activities such as library dissertation, dissertation selection, and patient work got affected, and hence it will take a little time to get adapted to the new framework.

Statement of Informed Consent and Ethical Approval
Necessary ethical clearances obtained from institution DCA/304/2019; informed consent was taken before initiating survey from all participants.

Declaration of Conflicting Interests
The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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