Exploring the impact of academic experience on dental students' evaluation (a pilot study)

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ABSTRACT:

Aim: This study aims to evaluate the validation process of competency assessment tools used in the medical education of level one dental students at the Faculty of Oral and Dental Medicine in Egypt. This article examines the validation process of competency assessment tools used in medical education for level one dental students in faculty of oral and dental medicine in Egypt, ensuring they measure relevant skills consistently and accurately in their practical work, also that students and professionals meet required standards and deliver safe, high-quality care in the future base on scientific knowledge.

KEYWORDS: Oncogenic Viruses; Viral Oncogenes; Carcinogenesis; Antiviral Vaccination; Oncolytic Virotherapy

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INTRODUCTION

Medicine is a respected career that requires a variety of abilities in addition to a steady personality with the right qualities [1]. From the moment of application to a medical or dental course, the prospective dentist is dedicated to a protracted process of evaluation that assesses his acquisition of the knowledge, abilities, and qualities required his/her future profession. Along the course of dental students' study suitable evaluation techniques with established validity and reliability must be developed to ensure proper training and preparing of the future dental graduates. The graduation of an adequately qualified dentist has a direct impact on the welfare of members of the society [1]. Therefore, subjective judgments may affect the fair process of assessment in the educational settings. This is particularly true when there are multiple evaluators with different prospectives and mindsets [2]. This is why it is crucial to have a rubric with enough details to ensure fairness as much as possible, even with different evaluators, as subjective judgement may affect the process of proper assessment [3, 4]. The primary goal of this study is to assess whether using a predetermined rubric can achieve reasonable consistency of scores across ratings of different evaluators with different academic experience levels. This study was conducted in the Oral Biology department at Alsalam dental school in Egypt.

MATERIAL AND METHODS

24 specimens were selected randomly from level one dental student's practical work, represented by wax carving of different classes of maxillary and mandibular teeth (incisors, canines, premolars and molars).Each student's work was labeled by a serial number that consists of four digits, the first digit from the left indicated if the tooth was upper or lower giving 1 and 0 respectively. The second digit from left indicated the number of the tooth from midline (1 for central incisor,

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2 for lateral incisor and 3 for canine and so on). The two right digits indicated the number of each tooth in the specimen (e.g. 1401 indicates for tooth number 1 of upper first premolar in thespecimen). Four experienced raters (staff members) in the first group assigned the 24 specimens separately in blind method and scores were recorded in Microsoft Excel spreadsheet (Mi¬crosoft Corp., Redmond, WA, USA), then assigned again by another group of four raters (co-staff members) in the same manner. After collection of data, the Statistical analysis of data was conducted using IBM SPSS Statistics version 22.

The grading scores for 24 teeth given by four staff members (group 1) and four co-staff members (group 2) were analyzed using Repeated Measures Analysis of Variance (ANOVA) to compare the grading performance between faculty members and instructors. In this analysis, the grading scores for the teeth were treated as repeated measures across the two groups.A within-subjects design was used where the two conditions were: faculty members grading and co-staff members grading. Each subject (grader) provided grading scores for the same 24 teeth,thus representing a repeated measure across these two grading groups.Significance was set at $p < 0.05$ for all statistical tests. The effect size for the ANOVA was assessed using partial eta squared (η^2), which provides the proportion of variance explained by the difference between the grading of faculty and instructors.

RESULTS

Table (1): Grading scores in faculty members (group 1) and co-staff (group 2)

	Group 1 (Mean±SD)	Group 2 (Mean±SD)	p-value
Grading scores	7.36±0.31	7.61±0.29	0.482

Repeated Measures Analysis of Variance (ANOVA)

The analysis revealed no significant main effect of Groups (Faculty members vs. Instructors) on the evaluation scores, $F(1, xx) = 0.562$, $p = 0.482$, $\eta^2 = 0.086$. This indicates that the overall evaluation scores were similar between faculty members (group 1) and instructors (group 2). As shown in table (1), the mean grading score for Group 1 (faculty members) was 7.36 ± 0.31, while the mean for Group 2 (instructors) was 7.61 ± 0.29. The standard deviations indicate that both groups had relatively low variability in their grading scores. The comparison of grading scores between the two groups was conducted using Repeated Measures ANOVA. The results indicated that the difference in grading scores between Group 1 and Group 2 was not statistically significant. The calculated p-value was 0.482, which is greater than the common significance threshold of 0.05. This result suggests that, despite a slight difference in mean scores between the two groups (Group 1 = 7.36, Group 2 = 7.61), this difference is likely due to randomvariation rather than any substantial effect.

Discussion

Understanding the human anatomy is a critical subject for all healthcare workers [5], accordingly the dental anatomy is one of the most important branches in the process of dental education, as students started to recognize the different shapes, forms and anatomical landmarks of the human teeth and surrounding oral tissues. At Alsalam Dental School, we teach students dental anatomy in practical laboratory sessions to increase the students' competence to understand the anatomy of teeth [6]. The practical laboratory work in the first year of application to the dental school is designed to train candidates on how to achieve knowledge and to build up the teeth by wax carving. We have integrated the lab than subjective to ensure fairness across students [7]. This study aimed to compare the grading scores between faculty members (Group 1) and instructors (Group 2) at the Faculty of Oral and Dental Medicine. The results of the Repeated Measures ANOVA indicated that there was no significant difference in the grading

scores between the two groups. Specifically, the mean grading score for Group 1 was 7.36 ± 0.31, and for Group 2, it was 7.61 ± 0.29. The p-value of 0.482 suggests that the observed difference in means is likely due to random chance rather than a true difference in the grading practices between the two groups. The lack of a significant difference between the grading scores of faculty members and instructors is an important finding. Despite the possible assumption that faculty members, who generally have more experience and higher academic positions, may be more accurate in grading compared to instructors, this study shows that both groups evaluate student work in a very similar manner. The findings suggest that the grading system employed by the faculty is robust, ensuring consistency across different types of academic personnel, whether they are more experienced faculty members or instructors. Both faculty members and instructors in this study are part of the same academic institution and likely follow the same grading criteria, rubrics, and institutional guidelines for assessing students' practical work. The similarity in the grading scores may reflect the uniformity of the assessment process and the alignment of grading standards across different academic roles. This could be viewed as a strength of the institution's grading system, ensuring fairness and objectivity in student evaluations regardless of the evaluator's rank or title. Previous research in educational assessment has explored the variability in grading practices between different academic groups. Some studies have suggested that more experienced faculty members tend to be stricter in grading compared to instructors or teaching assistants, primarily due to their greater familiarity with course content and assessment criteria [8]. However, other studies have found no significant differences in grading practices when standardized grading rubrics are used [9]. Our findings align with the latter, suggesting that the implementation of clear and standardized grading criteria can help minimize discrepancies between different evaluators, regardless of their level of expertise or experience. One potential factor contributing to the lack of significant difference in this study is the use of standardized rubrics or grading criteria. When both groups follow the same assessment guidelines and grading rubrics, the risk of grading variability due to personal preferences or teaching styles is reduced. This result is consistent with other studies showing that grading rubrics and training in assessment can lead to more consistent grading outcomes among faculty members and instructors [10]. While this study offers valuable insights into grading consistency between faculty members and instructors, several limitations should be considered. First, the study only focused on grading scores for one term, which may not reflect the broader patterns of grading over time. Future studies could extend the analysis across multiple terms or different types of assessments to explore whether the grading consistency observed in this study holds true across various academic contexts. Also in spite of the results were not statistically significant, the small-to-moderate effect size ($\eta^2 = 0.086$) may indicate a subtle difference between faculty and instructors that could be explored in future studies with larger samples.

Conclusion

In conclusion, this study provides evidence that faculty members and instructors at the Faculty of Oral and Dental Medicine exhibit similar grading scores, suggesting that grading practices are consistent across different academic roles. The absence of a significant difference highlights the importance of standardized grading criteria in ensuring fairness and consistency in student evaluations. Further research is needed to explore additional factors that may influence grading practices and to examine whether these findings hold true across different disciplines and types of assessments.

REFERENCES

1. .Evgeniou, E., et al., Assessment methods insurgical training in the United Kingdom.Journal of Educational Evaluation for Health Professions, 2013. 10.

2. Dąbrowska, A., et al., Evaluation of Current and Future Medical Staff Knowledge on the Course of Trauma Patient Maagement. Cureus, 2024.16(7): p. e64132.

3. Nayar,P.,etal,Supervising dentists' perspectives on the effectiveness of community based dental education. Journal of dental education, 2014. 78(8): p. 1139-1144.

4. Attali,Y., A comparison of newly-trained andexperienced raters on a standardized writingasessment.LanguageTesting, 2016. 33(1):p.99-115.

5. Kawashiro, Y., et al., Attitudes of healthcare students on gross anatomy laboratory sessions. Ana tomical Sciences Education, 2009.2(6): p. 273-279.

6. Raubenheimer, D., J.E. Raubenheimer, and S. van Zyl, A scoring framework for assessing anatomy competence of undergraduate preclinical students. Anatomical sciences education, 2016. 9(4): p. 319-329.

7. Khalifa, A.K. and S. Hegazy, Agreement between 2 raters' evaluations of a traditional prosthodontic practical exam integrated with directly observed procedural skills in Egypt. Journal of Educational Evaluation for Health Professions, 2018. 15(1): p. 23.

8. Chambers, D.W. and E.E.LaBarre, Why prfsional judgment is better than objective dscription in dental faculty evaluations of student perfomance. Journal of Dental Education, 2014. 78(5): p.681693.

9. Boud, D. and N. Falchikov, Aligning assessment with longterm learning. Assessment & evaluation in higher education, 2006. 31(4): p. 399-413.

10. Nicol, D.J. and D. Macfarlane Dick, Formative assessment and self regulated learning: A model and seven principles of good feedback practice. Studies in higher education, 2006. 31(2): p. 199-218.