ABSTRACT
The ability to prepare and restore the structure of a damaged tooth is a key competence for dentists. The PREPassistant® (KaVo®) is an applied tool in the assessment of dental preparations which increases the objectivity of the pre-clinical evaluation. In the teaching of tooth preparation for Fixed Prosthodontics there is great difficulty to explain to students the need to transform the dental crown in a tapered shape, with multiple specificities, in a three-dimensional view. This study aimed to compare the classic learning method of dental preparations with a new learning method, using templates with referrals and learning guides.

Keywords: Evaluation methods, PREPassistant® System, Classic Evaluation, Computerized visual evaluation, Training models, Dental simulators.

INTRODUCTION
In Dentistry education, assessment is a key element to measure the degree of knowledge. This research work aimed at developing an objective evaluation and classification system of dental preparations, in Fixed Prosthodontics, by means of using PREPassistant®, assessing the influence of two evaluation methods and different evaluators.

An original model of tooth 15 was used and an instructor model for system calibration was computer designed in CAD. To study the evaluation of dental preparations, two different evaluation methods were developed: a computerized system, the PREPassistant®, and a visual system using computerized images (AVI). In this study, operators contacted for the first time with the tooth preparation technique and, subsequently, executed the preparations to be assessed. The evaluation results were statistically analyzed ($p<0.05$). Using CAD-designed models for the PREPassistant® system, it was possible to standardize the tooth preparation technique along the axis of the preparation and cervical margin finishing.

Regarding the comparison between evaluation methods, we found that the AVI can be used as an alternative method; however, to decrease the variability and, thus, obtain a more uniform and consistent evaluation, it requires inter-observer calibration. According to the proposed methodology, the evaluation with PREPassistant® allowed an objective assessment of 83% of the parameters.

Subjective evaluation by PREPassistant® (17% of the total evaluation) can be improved with the use of 3D images provided by the system, and may increase the accuracy of the system to values higher than 90%.
RESULTS AND DISCUSSION

Thirty students were selected arbitrarily, these divided into two groups of 15 - Group A and Group B (control). There was two phases (diagnostic and learning). Were conceived models calibrated with referrals and learning guides that were prepared by the group A. Group B prepared according to the classical method and the results were read and compared by PREPAssistant® system according to a predefined evaluation grid.

There were no statistically significant differences in the diagnostic phase. There were statistically significant differences between groups A and B in the learning stage, being the group A the best performing group.

The models obtained in CAD and evaluated with PREPAssistant® allow significant developments in dental preparation technique and the learning phase can be more quickly and intuitively. It was possible to create standardized models for dental preparation technique according to the axis of preparation and finishing of the cervical margin.

REFERENCES


