Reviewer’s report

Title: Evaluating Learning of Classified Dental Caries Detection Methods by Third-Year Dental Students

Version: 2 Date: 29 September 2013

Reviewer: Anahita Jablonski-Momeni

Reviewer’s report:

Major Compulsory Revisions:

The aim of this paper was to evaluate teaching different methods of caries detection to third-year dental students.

The manuscript is interesting but confirmatory in some parts; hence some points have to be considered before considering the manuscript for publication. Some further statistical evaluation should be done and the manuscript should be re-written considering the following points:

1. The authors aimed to evaluate the teaching of different methods of caries detection. They should focus on either the visual systems or on apparatus base methods.
2. If the authors decide to keep all presented systems in this paper, they should calculate the correlation of the visual methods with the DD-Pen measurements.
3. For ICC the 95% confidence interval should be given.
4. For visual methods kappa-values should be provided in order to compare them to the values given in the literature.
5. For DD-Pen readings also the categories based on histology should be taken into account for statistical evaluation. It is recommended to use the categories of Lussi and Hellwig (2006, J Dent).
6. Although sections were made of the teeth, no validity of the visual and laser fluorescence findings were calculated (for example sensitivity, specificity, AZ etc.)
7. There is a recently published study be Jablonski-Momeni et al. (J Dent Education) where ICDAS-reproducibility values of 3rd year students are presented.
8. There is another study by Jablonski-Momeni et al. (2009, J Dent) regarding evaluation of histological depth of lesions on screen which should be used for discussion of the gold standard.
9. One important work by Jablonski-Momeni et al. is missing in the discussion which is the first paper on validation of the ICDAS-II system (Caries Res 2008).
10. In the figures also numbers should be presented.
**Level of interest:** An article whose findings are important to those with closely related research interests

**Quality of written English:** Acceptable

**Statistical review:** Yes, and I have assessed the statistics in my report.

**Declaration of competing interests:**

I declare that I have no competing interests.