Author’s response to reviews

Title: Acceptance of virtual dental implant planning software in an undergraduate curriculum: a pilot study

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Author’s response to reviews: see over
Point-to-point reply “Acceptance of virtual dental implant planning software in an undergraduate curriculum: a pilot study”

All changes to the text have been marked with a green background.

Reviewer: Ivan Darby

Page 2 Abstract
Background: “Advances in health care such as...”
The requested correction has been included in the text at the beginning of page 2.

Please start all sentences with a number written out.
The required correction has been made in the second paragraph of page 2. Moreover, the complete text was checked for this problem.

I would add where this study was undertaken.
In the second paragraph of page 2 it is now stated that the study was performed at the University of Erlangen-Nuremberg.

Page 4
Remove the word “high” for “potential”
“high” was removed at the beginning of the second paragraph of page 4.

What do you mean by” most varied organizazions”? 
“Most varied organizations” was removed and replaced by “universities, hospitals and private practices”.

Page 6
Please describe how long the students are taught the implant planning software and what they do.
In order to address this recommendation the following text was included in the first paragraph of page 6:
The course was delivered as 28 face-to-face modules of 45 minutes. It included an introduction to the virtual implant planning software of two modules of 45 minutes with a
hands-on training (NobelClinician, Nobel Biocare AG, Kloten, Switzerland). Subsequently, each student received a copy of the software for installation on his or her personal computer. Over a period of three months the students had to carry out the planning of implant positions for the replacement of missing teeth in three different computed tomography data sets. Each planning was checked by a supervisor and feedback was given.

*Please describe the scoring of the questionnaire.*

In order to address this recommendation the following text was included at the end of the second paragraph of page 6:

The items were measured on a six-point Likert scale ranging from 1 (“I totally disagree”) to 6 (“I totally agree”).

*Surely median and IQR should be used.*

It is now indicated that median and IQR are used. The following text was included in the beginning of the second paragraph of page 7:

Median values and interquartile ranges (IQR) are given for the results of the questionnaire.

Median and IQR values are now given in Table 2.

*Page 9*

Please correct the grammar of “specified by they have been” in the last sentence of the second paragraph of page 9.

The grammar has been corrected.

“it does not allow use of…”

The sentence has been corrected in the last paragraph of page 11.

*Page 11*

The discussion should include more about the students and the usefulness of the planning software. The acceptance by students does not come true in the discussion.

The following paragraph was included on page 11 in order to address the recommendation:

At the Dental School of the University of Erlangen-Nuremberg students are confronted with implant dentistry from the first day on. They gather profound theoretical knowledge in the field. Moreover, the students have the possibility to observe implant surgery and to treat
selected patient cases prosthodontically by themselves. However, so far there was a gap as far as the use of the acquired knowledge on implant dentistry for treatment planning was concerned. The use of virtual implant planning software in an undergraduate setting seems to be a relevant solution for this problem [18]. The students are put into a position where they can plan implant treatment and virtually place and restore these implants. They are enabled to transfer their theoretical knowledge to a more practical situation. It can be assumed that the addition of virtual implant planning to an undergraduate curriculum leads to a deeper understanding of implant dentistry. Providing copies of the software to the students enables them to use the virtual dental implant planning tool at their best convenience as long as they want to. Getting feedback by the supervisors on the quality of the planned patient cases leads to an additional increase of the learning effect and supports further reflection on the topic [19]. As a consequence, the good acceptance of the virtual dental implant planning software by the students in the present study does not seem be surprising.

*Is Figure 1 really needed?*

Figure 1 has been removed.

*Explain Table 3 in the results.*

The following text has been included in the results section in the third paragraph of page 8.

Reviewer: Ray Peterson

*Comparison of cronbach’s alphas with alphas already published for these scales.*

In order to address this recommendation the following text was included in the second paragraph of page 10:

The reliability of the measurements of the different constructs in the present study compared well to other trials on technology acceptance in different fields of health care. Cronbach’s α values ranging from .55 to .93 have been described by different authors [9,15,16]. The range of the Cronbach’s α values was not that pronounced in the present study (.71-.85, Table 2).
However, the Cronbach’s $\alpha$ values were always above .7 indicating an acceptable reliability [10].

*Figure 1 should be deleted.*
Figure 1 has been removed from the manuscript.

*Include the relevant correlation data into the discussion to support case.*
The following text has been included in the fourth paragraph of page 10 in order to address the recommendation:
In the present study perceived usefulness showed a significant correlation to attitude ($p=.002$) as well as behavioural intention ($p=.001$, Table 3). As with previous studies perceived usefulness appeared to be one of the most important factors affecting the students’ acceptance of the new technology [15]. On the other hand, perceived ease of use did not show a significant correlation with either perceived usefulness or attitude (Table 3). It seems that dental students are pragmatic in their technology acceptance decisions, appearing to focus on usefulness in technology assessment. They tend to accept a technology when it is considered to be useful to their practice independent of the factor if the use of the technology is convenient. This finding is consistent with the results of previous studies which showed that usefulness is more important than ease of use [17].

*Check for the use of gender specific terms.*
Throughout the text “his” was changed to “his or her”.

*Page 6 line 11*
This text was removed along with Figure 1.

*The definitions of the constructs should be placed in a table.*
An additional table has been added to the manuscript (Table 1). It includes the definitions of the constructs.