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3D-printed model enhances learning experience in optometric education (Article) [\(Open Access\)](#)

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Abstract

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Three-dimensional (3D) printed model becomes more popular as the flexibility to print 3D model has become cheaper to produce. This research sought to assess the effect of using 3D printed model as a tool in teaching on optometry students. Another primary focus of this research was to assess the confidence level and enjoyment level among the second-year optometry students on traditional lecture method and compared it with the use of 3D printed model as a teaching aid. Confidence is important as an optometrist, especially when making the right clinical judgement. Enjoyment is also important as it may help learning process become effective and fast. A total of 36 second-year optometry students were selected to participate in this research. The 3D printed model was based on ophthalmoscope that had been printed using PRUSA 3000 3D printer. The students were divided into two groups - one group was exposed to the lecture only and another group was exposed to 3D model in addition to the traditional lecture. Two sets of questionnaires were given to assess their confidence and enjoyment level before and after each learning session. The confidence level assessment and the enjoyment level comprise of three statements on each topic answered by the students using 5-point Likert scale. The results showed that there are significance differences between lecture only group and lecture with 3D-printed model group especially as a visualization tool ($P = 0.001$) and it is considered to be enjoyable and stimulating ($P = 0.008$). This study demonstrates that the usage of 3D printed model as teaching aid does affect the confidence level and enjoyment level of students. © Blue Eyes Intelligence Engineering & Sciences Publication.

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