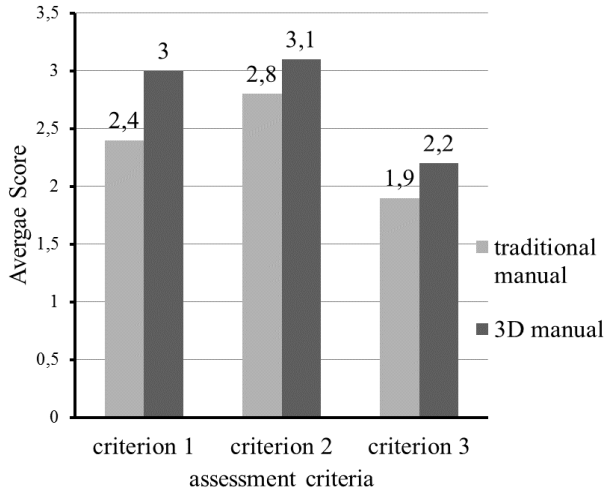

Fig. 5 Assessment result

The result indicates that the average score of the interactive maintenance manual with Web3D technologies (called 3D manual) is higher than the traditional one, for all assessment criteria. A significant difference is found in criterion 1 visual know-how. This finding correlates with Setchi [18] and Ahmad [19] who states that hypermedia for maintenance manual will improve visual knowledge that impacts on a better understanding. Colaso [20] had compared the effect of visualization, text and mixed method toward information retention. He found the similar effect with this result, where visualization with animations and texts will improve information retention.

IV. Conclusions

3D CAD models of fabrication facilities which have been produced in the design stage can be optimally used for other purposes in Product Lifecycle Management (PLM), especially for maintenance purposes. This work reuses of those 3D CAD data of oiling filling machine and then modifies them into an interactive electronic maintenance manual by using the latest Web3D technology. Cortona3D and its VRML authoring toolkit will transform the data into a standard module which provides maintenance operations in two distinctive features described in texts and animated 3D visualizations all at once. The combined method will bring an intuitive understanding for the user. The assessment result shows that the 3D manual will improve the visual know-how better than the traditional one. By using interactive and 3D animated manual, the user can explain maintenance procedure with more accuracy and not open more than one interpretation. In addition, the assessment also states that the interactive 3D maintenance manual will improve the information retention rather than a traditional module.

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