

## **Enhancement of outcome-based learning via SLP Mapping Platform**

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### **Introduction of the SLO Mapping Platform**

Outcome-based learning has been regarded as one of the most important education concepts in recent years. It suggests that learning objectives should be established prior to designing any learning activity. The aim is to ensure learning activities to be aligned with the objectives, as identified at the initial stage, which in turn, increases the chance of accomplishing these objectives in later stages as these activities take place. Ideally, learning outcomes achieved through well-designed learning activities should be the same as that identified at the beginning. However, subject to individual difference in learning needs, it is somehow difficult to incorporate such strategy in practice.

In search for a strategy that incorporates outcome-based learning comprehensively, the Faculty of Medicine has commenced the use of a new learning platform known as Student Learning Outcomes (SLO) Mapping Platform in year 2010. As mentioned previously, outcome-based learning is central in aligning learning materials and assessment with objectives identified at the beginning. Therefore, the platform was arranged correspondingly into three parts: Students' learning objectives, learning materials and assessment exercise.

In order to understand whether students were achieving learning outcomes corresponding to the objectives as identified previously, the platform worked in couple with the algorithmic cycle "SLO-Learning Materials-Formative Assessment". The cycle consisted of assessments which were in numerous stages with respect to each learning objective. The cycle began with an illustration, which exhibited outcome-based learning objectives in detail. Students had to go through these objectives so as to understand what to be learnt in the course and therefore, made better plans for their studies.

Next step of the cycle comprised a series of learning materials, which could be downloaded or previewed within the platform. Some of these materials were SLO-based, which aimed to assist students with their preparation for classes. Some of them were local web-based, which contained downloadable PDF handout, non-downloadable webpage files, videos, images and sources to other learning resources. Students were advised to take advantage of these materials during their courses of preparation before each lecture. Thanks to the provision of multimedia-based resources, students had not only been able to go through the basics of each lecture beforehand, but to preview demonstrations before each practical. As a result, by preparing at an early stage of their studies, it was more likely for them to achieve learning outcomes as identified for the course.

Last step of the cycle was an SLO-based Formative Assessment. The aim was to crosscheck whether students had acquired knowledge or achieved goals as set by their teachers. Students were required to complete a series of questions in each stage before moving on to advanced

stages. For those who did not pass a particular stage of assessment, they have to re-read learning materials and to redo the exercise of that stage until they complete the exercise with satisfactory performance. Majority of these questions adopted multimedia extensively, which attempted to diversify both the content and presentation of each assessment. Each of these questions focused on developing students with the skills to solve problems and to think logically in the context of medical practices. Consequently, by redoing difficult exercise, which students were less similar with, there would be a higher chance of success in accomplishing learning objectives.

Besides the advantage of achieving intended learning objectives, SLO-based Formative Assessment platform was capable in standardizing teaching content, which had to be delivered by teachers starting from year three of the course. Even though students were assigned with different teachers or tutors, people who taught them were able to lecture in accordance with the same set of learning outcomes identified at the beginning of the course. That is, the platform effective in synchronizing teachings of different classes, which in turn, assured students in achieving intended learning objectives.

### **Advantages of the SLO Mapping Platform**

Although the use of SLO Platform was still limited to the Department of Orthopaedics and Traumatology, it is believed such platform to be effective in bringing numerous benefits to other disciplines at the university. Following is a list of positive impacts that the platform could bring upon,

- Students could get an idea about what they should expect to achieve right at the start.
- Students could learn at their own pace so as to increase the chance of achieving intended learning objectives, which were set at the beginning
- Students could better prepare themselves before each lecture or practical through studying materials provided in the platform
- Teaching objectives, contents and materials could be standardized among classes taught by different teachers.
- Teachers were able to follow a clear list of objectives as stated in the platform and therefore, to know exactly what they have to teach