Danish University Colleges

Developing a Learning Analytics tool

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Publication date:
2017

Document Version
Publisher's PDF, also known as Version of record with the publisher's layout.

Link to publication

Citation for published version (APA):

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**DEVELOPING A LEARNING ANALYTICS TOOL**

**ABSTRACT**
This poster describes how learning analytics and collective intelligence can be combined in order to develop a tool for providing support and feedback to learners and teachers regarding students' self-initiated learning activities.

**INTRODUCTION**
In 2013 the Danish university college sector began the implementation of the Study Activity Model (SAM). SAM should provide for all programmes a single academic tool which can shape the study expectations of the students in relation to study intensity (Denmark, 2014). The model is divided into four categories as shown in figure 1. Based on previous work (fig. 2) (Ringtved et al., 2017) we are now designing a tool that support students in reflecting on their study related learning activities. And also help teachers becoming aware of study related learning activities and making activities a part of other categories in SAM.

**THEORETICAL MODEL**
Our model (figure 4) shows how students can use their self-initiated study activities to construct and enhance their learning capabilities and professional capabilities throughout their education. The model constitutes of a leaning triangle consisting of the three concepts self-initiating learning, self-regulating learning and self-assessing learning in each corner of the triangle. These three concepts are interdependent and feedback is given and taken in a continuous process as described by Clow (Clow, 2012).

**FIGURE 1**

In 2013 the Danish university college sector began the implementation of the Study Activity Model (SAM). SAM should provide for all programmes a single academic tool which can shape the study expectations of the students in relation to study intensity (Denmark, 2014). The model is divided into four categories as shown in figure 1. Based on previous work (fig. 2) (Ringtved et al., 2017) we are now designing a tool that support students in reflecting on their study related learning activities. And also help teachers becoming aware of study related learning activities and making activities a part of other categories in SAM.

**FIGURE 2**

The four categories in the Study Activity Model (Denmark, 2014)

**FIGURE 3**

Framework for enhanced use of students' self-initiated study activities.

**METHOD**
The method for our development process is Design & Development Research (DDR). DDR describes the research process for developing information technology products or artifacts (Ellis and Levy, 2010).

The DDR process is divided into six steps as shown in fig. 3. Currently our development process is somewhere between step b and c. We have the objectives in place after researching the overall problem. Now we need to get a clear idea about the detailed requirements and the design for the tool. One method we can use in this process is the Learning Analytics Model (LAM).

LAM is a model for describing a systematic approach to analytics into different components (fig. 5) (Siemens, 2013). The process described by LAM is iterative. The actions that is performed at the end (last step) will influence on the collection of new data (see later about feedback).

Developing on top of LAM we will introduce Collective Intelligence (CI) as an important part of our system. CI is the idea that supported by the technology, people can benefit from the synergy of the collected effort (Lévy, 1997).

** FIGURE 4**

Model for self-initiated, self-regulated and self-assessed activities.

**ANALYSIS**
In the following we will use LAM to analyze our current ideas for the tool. We will leave out components that are not relevant at this point.

**FIGURE 5**

Learning Analytics Model (Siemens, 2013)

**FIGURE 6**

Developing on top of LAM we will introduce Collective Intelligence (CI) as an important part of our system. CI is the idea that supported by the technology, people can benefit from the synergy of the collected effort (Lévy, 1997).

**REFERENCES**


Ringtved, Ulla et al. (2017). “Development of Students Learning Capabilities and Professional Capabilities”. In: Vancouver, BC, Canada.