Self-regulated learning in open online education

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Outline

- Introduction
- Method
- Results
- Implications
“Students that self-regulate their learning are actively involved in their learning process before, during, and after learning” (Zimmerman, 2002).

Introduction

Self-regulation  Achievement
Introduction

Self-regulation \rightarrow \text{?} \rightarrow \text{Achievement}
Research aim

Are differences in self-regulation related to differences in learning behaviour?

- Measure students’ SRL
- Cluster students’ based on SRL
- Process mining of log data
- Visualize learning patterns
Method

MOOC “Systems Thinking and Environmental Sustainability”

- Introductory video
- Content videos
- Recap questions
- Summary video
- Practice questions
- Graded test questions
  (- Essay assignment)

Results
## Results

<table>
<thead>
<tr>
<th>Metacognitive skills</th>
<th>Time management</th>
<th>Environmental structuring</th>
<th>Persistence</th>
<th>Help seeking</th>
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## Results

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<tr>
<th></th>
<th>Average regulators (n = 22)</th>
<th>Help seekers (n = 15)</th>
<th>Self-regulators (n = 10)</th>
<th>Weak regulators (n = 15)</th>
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</thead>
<tbody>
<tr>
<td>Metacognitive skills</td>
<td>4.44</td>
<td>4.95</td>
<td>5.52</td>
<td>3.93</td>
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<tr>
<td>Time management</td>
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<td>2.62</td>
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<td>Environmental structuring</td>
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<td>5.01</td>
<td>6.42</td>
<td>4.99</td>
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<tr>
<td>Persistence</td>
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<td>3.73</td>
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<tr>
<td>Help seeking</td>
<td>1.45</td>
<td>3.65</td>
<td>1.82</td>
<td>1.55</td>
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Method (2)
Process mining

Method to visualize processes in a structured manner, including the process MOOC students engage in.
Average regulators
Help seekers
Self-regulators
Weak regulators
Conclusion

(1) Participants in all clusters generally stick to the advised course structure.

(2) The process models of the four clusters are - therefore – comparable.

(3) There are however also clear differences between clusters.
Implications

- Process mining can be used to study participants’ behaviour in a MOOC.
- Interventions and learning behaviour
- Interventions aimed at weak regulators