# Teaching Sustainability: Running a MOOC on “Sustainability in everyday life”

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1. **What is a MOOC?**
   - M – Massive, O – Open, O – Online, C – Course
   - E-learning on a global scale
   - Participants of all ages and occupations
   - Education free of charge
   - Developed at universities and can be either based on on-campus courses or courses developed from scratch

2. **“Sustainability in everyday life”**
   - One of the first two MOOCs developed at Chalmers
   - First run during Summer 2015, second run during Fall 2016
   - First run had more than 9000 enrollments, the second run almost 4000
   - Themes addressed: chemicals, climate, energy, food, globalization

3. **What is the ADDIE model?**
   - Model for an iterative instructional design process, where the results of the formative evaluation of each phase may lead the instructional designer back to any previous stage.
   - Used as a tool to reflect on the various aspects of the MOOC

## Table: Teaching Sustainability: Running a MOOC

<table>
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<tr>
<th>Analysis</th>
<th>Design</th>
<th>Development</th>
<th>Implementation</th>
<th>Evaluation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>MOOC on sustainability</strong></td>
<td>Educating the world → Targeting the informed citizen</td>
<td>Knowledge developed during the course → Along the “funnel”</td>
<td>What knowledge? → Systems thinking Evaluating news</td>
<td>While far from the biggest, the MOOC attracted a significant amount of participants</td>
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<tr>
<td><strong>What content?</strong></td>
<td>Profile of the informed citizen → Passed compulsory school</td>
<td>Contents of the MOOC → Top sustainability themes in the news</td>
<td>Sub-division of the themes → One theme per “funnel”</td>
<td>Themed were based on a survey of the news. We were not criticized for the chosen content.</td>
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<tr>
<td><strong>What happened during the 1st run?</strong></td>
<td>Managing of time constraints → Agility</td>
<td>Sequential launch of themes? Use of a β-tester</td>
<td>Lectures’ connection to exercises → Exercises linked to intro and mini lectures</td>
<td>Videos were generally well received. Some exercises were heavily criticized. The exam was quite well received.</td>
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<td><strong>What happened during the 2nd run?</strong></td>
<td>Revisions to improve quality → Quizzes and exercises</td>
<td>MOOC for research purposes → New exercise on climate change</td>
<td>Topics that were lacking → New mini-lectures (e.g. on plastics)</td>
<td>The discussions on the forum were well-informed. The 2nd run went much more smoothly than the first one.</td>
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</tbody>
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4. **Our experiences**
   - Ownership of idea
   - Different roles – owner, teacher, learner, negotiator, designer etc.
   - Important to communicate pedagogical idea
   - Intensive production, open and agile working atmosphere
   - Planning sometimes did not work

5. **Pedagogical design**
   - Instant feedback from discussion forum
   - Possibility to redesign while running the MOOC
   - Add missing content and keep it up to date
   - Use of learning analytics as feedback

6. **Run 1 versus Run 2**
   - The experience of the 1st run and familiarity with the medium aided the 2nd run
   - We recorded new videos for the 2nd run
   - The assignments were scrutinised before the start of the 2nd run of the MOOC
   - Less funding for the 2nd run
   - Civilised and constructive discussion forum during the 2nd run

7. **Future improvements**
   - Add videos on indicators and UN 17 sustainability goals
   - New assignment on climate change
   - Move content to a local platform to facilitate access for Chalmers students
   - New uses – pre-knowledge test for those who are not familiar with sustainable development and a complementary education to fulfil Chalmers’ demand of 7.5 credits of Sustainable development courses

8. **Conclusions**
   - The ADDIE model is a useful tool for reflecting on and improving the MOOC for the 2nd and coming 3rd run
   - The MOOC is a dynamic learning facilitator
   - Flexible learning tool: it is possible to make changes while running a MOOC

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**References**