Scalable Support for Learning in MOOCs
The role of MOOCs in Higher Education

Peter van Rosmalen, Julia Kasch & Marco Kalz
Welten Institute
Open University of the Netherlands
peter.vanrosmalen@ou.nl
Open University of the Netherlands
Welten Institute

Three faculties (7 bachelor & 9 master programs, 17,000 students: part-time; age 20-80):
• Humanities and Law
• Management, Science, and Technology
• Psychology and Educational Sciences ..... 

Welten Institute (55 staff & 20 internal and 80 external phd-students):
• Master of Learning Sciences
• Research program: "Learning and teaching in technology enhanced learning environments".
  – Fostering Effective, Efficient and Enjoyable Learning (cognitive)
  – Technology enhanced learning environments for teaching and learning (technology)
  – Teaching and teacher professionalization (teachers)
MOOC: The Concept

Variations (pedagogical):
- cMOOC
- xMOOC

But also (use/focus):
- SOOC (Selective ...)
- LOOC (Local ....)
- MOOR (Research ....)
- HOOC (Hybrid ...)

(SURF, 2014)
MOOC: Objectives

(Jansen & Schuwer, 2015)
MOOCs: Design & Use

Quality:
Recent literature (Rosewell & Jansen, 2014; Margaryan, Bianco & Littlejohn, 2015; Spector, 2014) opens up the academic discussion on quality of MOOCs.

Use & Usefulness:
Use figures are high. Completion rates are low: less than 10%.

• ...... 22% intention to complete succeeded versus 6% intention ‘to browse’ (Reich, 2014)

HEC Amsterdam, 14 July 2016
MOOCs: Design and Use

Is the design quality low; Is dropout high? Do we measure right? What do we know about these students? And about the institutions?

“.... in thinking about the pedagogy of MOOCS, it will be important to continue to avoid preconceptions, ........, as these assumptions may not be helpful in new environments” (Bayne & Ross, 2014).
The SOONER project is a five year research project (started 1 September 2015) focusing on the development and use of open online education (OOE) in the Netherlands.

The SOONER project works closely together with the so-called “Surf Projects”.

- Between 2015 – 2018 Surf coordinates each year a call of the Dutch ministry for about 12 projects on open and online education.
- These projects should stimulate and enhance the practice and experience of Dutch Higher Education with open online education.
SOONER: MICRO, MESO, MACRO

MICRO: Learners level

PhD A
Self-regulated learning skill acquisition

PhD B
Motivation and intentions as key to drop-out

MESO: Course level

PhD C
Scaling of support, feedback and interaction

MACRO: Organizational Level

PhD D
Organizational development and educational innovation

see: www.sooner.nu

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SCALING OF SUPPORT, FEEDBACK AND INTERACTION
Scaling of Support, Feedback and Interaction

One of the core questions for implementing Open Online Education is which educational design approaches and support and feedback options are able to scale (Ferguson & Sharples, 2014), i.e.:

• can be implemented for large number of students without increasing the number of tutors and while maintaining quality.

Higher education in general:

• World wide. The number of students is expected to grow from 90M in 2010 to 414 M in 2030 (UNESCO, 2009; ICDE, 2015)

• The Netherlands. The study success (efficiency, dropout and study switch) of students in the Bachelor's phase is improved through a more ambitious and less non-committal study culture, intensifying education and investment in teacher quality. This takes place against a declining government grant per student. (VNSU, 2012)
MOOC: Studying (Stretching) Design

MOOC designs are open and accessible

MOOC user, usage and performance data can be studied at a detailed level

MOOC can potentially serve many students

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Increase our knowledge about learners

Increase our knowledge about design and the scalability of design
Participation in MOOCs
academic and social integration

Are learners “tuned” in when they embark on a MOOC journey?

Academic Integration (Tinto, 1975):
- Articulate the course objectives & activate –
- Make aware of (the need of any) prior knowledge
- Articulate (“negotiate”) expectations & engagement level(s)

Constructive Alignment (Biggs, 2003):
- Alignment of objectives and assessment
Participation in MOOCs
academic and social integration

Social Integration (Tinto, 1975) (.... Social Capital .......).

Be aware of / Make the student part of the community:

• Diversity of students' cultures, languages;
• Age, gender, experiences and occupation;
• Educational backgrounds and expectations & timing;
• Motivations for participating (grade, lifelong learning, personal);
• Time zone; Technology and internet access, and online experience
Teaming / Connecting

• Large to small team (relation loss: motivation and coordination)

• Team composition (purposeful: knowledge, practical preferences, personality/culture, timing, ....)
Teaming / Connecting

• Question – Answering (Van Rosmalen et al., 2008)
  Student questions routed to private wiki’s & selected peers

• Team formation for Collaborative Learning (Spoelstra et al., 2015)
  Project team formation based on knowledge, preferences and personality

• Tuned models of Peer Assessment (Piech, Huang, Chen, 2013)
  Algorithms for estimating and correcting for grader biases and reliabilities
Interactions, feedback and support
Behind and Beyond the Computer

STEM: automated assignments (programs, equations, ….)

Alternatives in- and outside STEM:
• Essay, Voicethread, Mindmap, Poster, Game, Photo, Video, Sensor, ……….
Interactions, feedback and support
Behind and Beyond the Computer

Culture:
Serious Game (Klemke, 2012)

Archaeology (UCL):
Video assignment (Martinon-Torres, 2014)

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Interactions, feedback and support
Behind and Beyond the Computer

Text analysis (Open Assignment)

Learning Analytics (Reflection)

(Rosmalen et al, 2013))

(Verpoorten, 2012; Davis et al, 2016)
Interactions, feedback and support
Behind and Beyond the Computer

Presentation Skills
Sensor based assignment
(Schneider et al, 2015)

www.metalogue.eu

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Questions?

Interested to participate:

• **Survey**: MOOC Design Common and Best Practice
• **Group Concept Mapping**: Your institutional perspective on open online education (note: the GCM is in Dutch)

For information see: www.sooner.nu

Peter.vanRosmalen@ou.nl
DISCUSSION