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## Greening the global classroom: Experiences using MOOCs to advance sustainability education

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2015

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*Citation for published version (APA):*

Richter, J. L., & Leire, C. (2015). *Greening the global classroom: Experiences using MOOCs to advance sustainability education*. Global Cleaner Production and Sustainable Consumption, Sitges, Spain.

*Total number of authors:*

2

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# Greening the global classroom:

EXPERIENCES USING MOOCS TO ADVANCE SUSTAINABILITY EDUCATION

*Jessika Luth Richter and Charlotte Leire*

*Peter Arnfalk, Kes McCormick, Håkan Rodhe*



# Why a MOOC for sustainability education?

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- Outreach for sustainability institutions/programmes on a larger scale
- Maintain capacity of online sustainability education
- Public service purpose of higher education
- To engage and connect learners interested in sustainability (including educators)
- Build an online sustainability educational community



# Sustainability Education @ International Institute for Industrial Environmental Economics (IIIEE)

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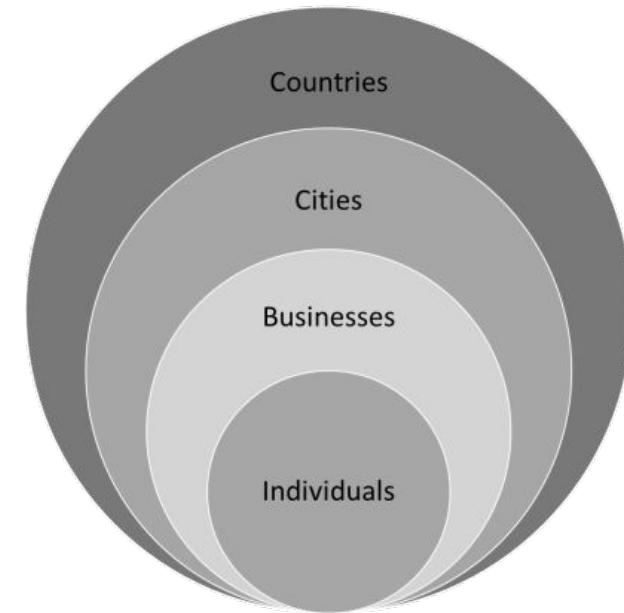
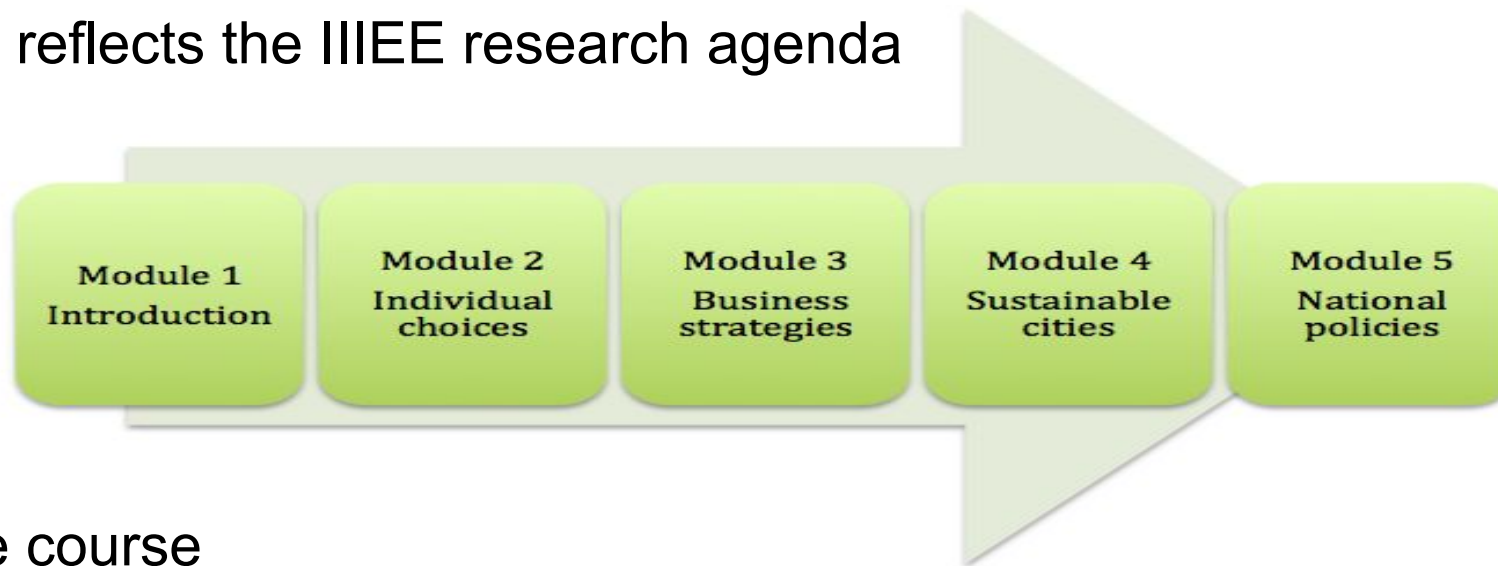
- Since 2005, two Masters programmes in Environmental Management and Policy (EMP) and Masters in Environmental Science, Policy and Management (MESPOM)
  - First year of EMP delivered online since 2006
- 2005-2010 IIIEE hosted the Energy for Sustainable Development online course ([www.e4sd.org](http://www.e4sd.org))
- Until 2012 IIIEE hosted the Young Masters Program (YMP, [www.goypm.org](http://www.goypm.org))
- IIIEE Sustainable Consumption topic lectures on iTunes University





# Greening the Economy: lessons from Scandinavia

- The topic...
  - is of high theoretical and applied relevance
  - is recognized by UNEP and by governments
  - reflects the IIIEE research agenda



- The course
  - examples and perspectives from Scandinavia
  - encouraged sharing examples and perspectives from the globe

<https://www.coursera.org/learn/greening-the-economy>



# Greening the Economy: lessons from Scandinavia

Readings*	Complementing video lectures with written material and additional external links
Quizzes*	Testing knowledge from video lectures and compendium
Forum discussions*	Stimulating learner discussions on the key concepts, deeper learning and application
Course assignment*	Requesting learners' own reflections and choice of greener initiatives for deeper learning and application
Peer assessment*	Evaluation of other learner assignment work, reflection upon own approach
Hangout	Allowing for instructors involvement/in-depth explanations, discussions and responses to learner discussions
In-video polls	Soliciting data from the learners
Community engagement	Promoting a feeling of a learner group
Additional literature	Offering more specific information on the key concepts; introducing learners to academic readings

# Global Classroom

ZeeMaps  
We map your lists

## Greening the Economy participants location map

In this interactive map you can pin your location. In this way you and other participants in the GtE MOOC can find out if there are other participants nearby, and perhaps arrange a Meetup! Don't put personal details here as it is a public map.



- > 20 000 signed up
- From 176 countries
- 34 % from emerging economies
- 48% had not heard of Lund Univ.
- 26% full-time students, 13%, part-time students, 61% not students



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# Student Activity

- Close to 10,000 learners active
- Close to 1,500 learners completed
- 367 learners chose signature track

## Greening the Economy: Lessons from Scandinavia

by Dr. Kes McCormick, Dr. Luis Mundaca, Prof. Oksana Mont, Prof. Lena Neij, Dr. Thomas Lindhqvist, Dr. Håkan Rodhe

Overview

Reach

Engagement

**Content**

Polls

Classic Tools

Exports

Content Activity  
All Time ▾

166,500  
lectures viewed

22,761  
exercises submitted

10,127  
forum posts made

...viewed 57 000  
times

Number of times our 40  
lecture videos and  
interviews have been  
watched

Number of quizzes and  
assignments submitted

Number of forum entries –  
posts and comments



# Impact on students: feedback

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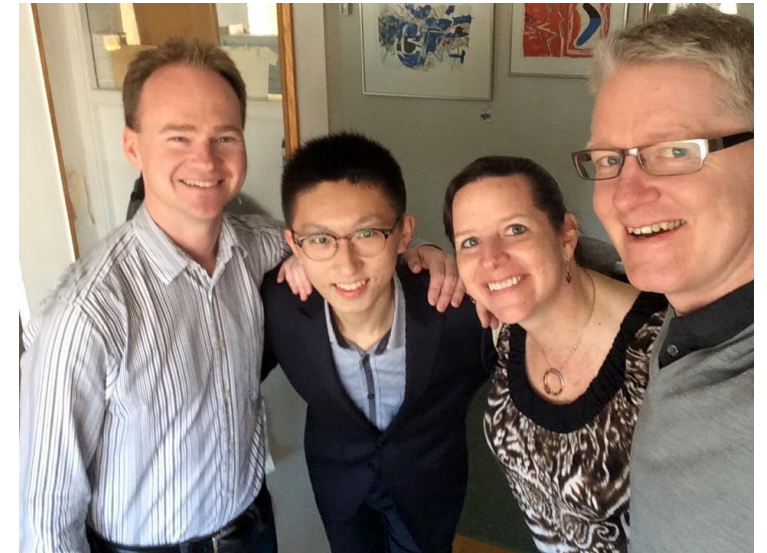
95% - course material quality "good or excellent"

90% - video lectures "valuable or extremely valuable"

77% - improved understanding "quite a lot/very much"

75% - more or much more favourable view of Lund University and IIIEE

73% - would like, or maybe would like, to study the topic at a university



- Some learners have volunteered to work for the course as veteran forum moderators
- Discussion in forums about how students would integrate learning into their lives
- Compendium is downloaded and distributed

# Impact on our Institution: reflection

- From skepticism to enthusiasm
- Library of video resources for on-site courses
- Missing interaction between course and lecturers
- Time still an issue
- Insight into links between research, education, and society



# Future considerations for IIIEE MOOCs

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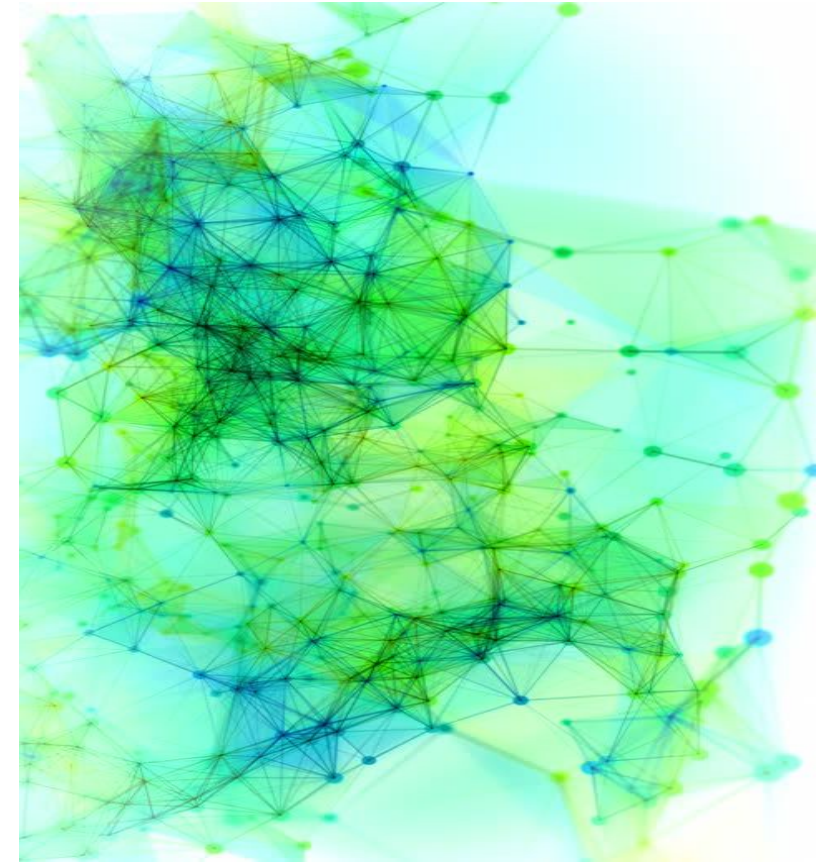


- Placing MOOCs in the educational context
- Level of the course?
- What are the limits of “massive”?
- A need to examine learner motivations more in depth, and in the context sustainability education
- Strengthen link between the MOOC and research-both ways

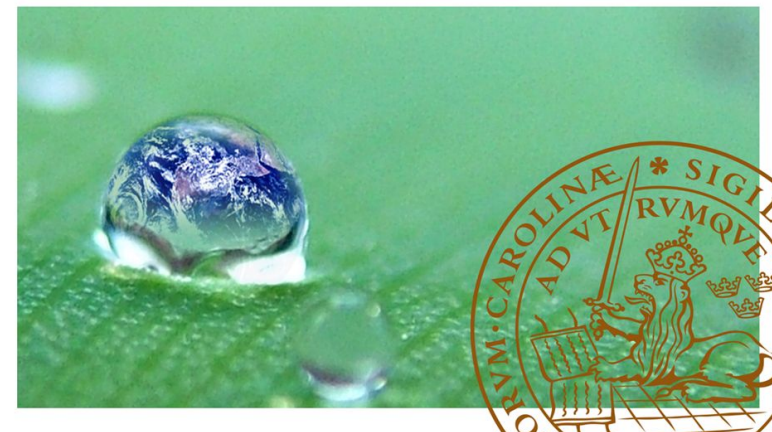
# MOOCs for sustainability

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- **Potential advantages**
  - Scale and reach
  - Open resources
    - learners, educators, organisations
  - Lifelong learning
  - Mobile learning
  - Networking
- **Potential challenges**
  - Embeddedness
  - Deeper learning
  - Learner/Educator roles and responsibility



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