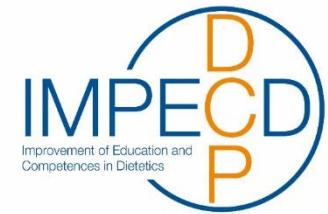




Erasmus+



# Conception and challenges for creating a MOOC for dietetic students



Dr. Elisabeth Höld, St. Pölten University of Applied Sciences



**Hochschule Fulda**  
University of Applied Sciences

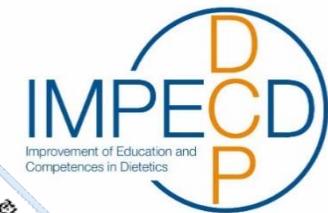


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"This project has been funded with support from the European Commission. This publication reflects the views only of the author, and the Commission cannot be held responsible for any use which may be made of the information contained therein."



**M CAMPUS** / MOOCS & DOCS

## Treize MOOC à suivre en cette rentrée

LE MONDE | 22.09.2015 à 08h53 • Mis à jour le 23.09.2015 à 11h46 | Par Matteo Maillard

Astuces pour se préparer à l'entrée à l'université

Parmi les dizaines de cours en ligne -- ou MOOC, acronyme de massive open online courses -- un assez en partie centrée sur les plateformes de France.

## The Year of the MOOC

By LAURA PAPPANO NOV. 2, 2012

**EDUCATION LIFE**

**The Innovation Campus:** Building Better Ideas

**PAID POST: PHILIPS**  
How Do You Mend a Broken Heart, Without Breaking Budgets?

**DIE WELT**

JETZT MIT Spotify

NUR HIER!

SPOOTNIK PREMIUM KOSTENLOS

**WIRTSCHAFT INTERNET-STUDIUM**

## Wenn man die Uni nur vom iPad-Display kennt

Viele Akademiker haben noch nie einen Hörsaal von innen gesehen: iPad, Video-Tutorien am Laptop sind keine Zukunftsmusik mehr. virtuellen Studentenleben.

## One Course, 150,000 Students

By TAMER LEWIN NOV. 26, 2012

**EDUCATION LIFE**

**Q & A WITH ANANT AGARWAL**

**Are Final Clubs Too Exclusive for Harvard?**

**PAID POST: PHILIPS**  
How Do You Mend a Broken Heart, Without Breaking Budgets?

**ARTICLES** **HOMEPAGE** **SEARCH**

**Fighting for Free Speech on America's Campuses**

**Will You Switch Schools for a Career?**

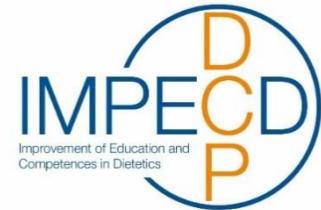
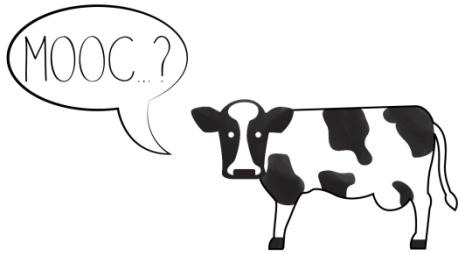
## Mooc : les enjeux cachés de l'enseignement en ligne

Le Monde | 11.10.2013 à 10h42 • Mis à jour le 11.10.2013 à 10h42 | Par Guillaume Miquelard-Garnier (co-fondateur du groupe de réflexion L'Alambic, et maître de conférences au Conservatoire National des Arts et Métiers)

Abonnez-vous à partir de 1 €

## MOOCYSTERIA

Something New in Shock-thriller Education



- **Massive** – unlimited number of participants (Wulf, Blohm, Leimeister, & Brenner, 2014)
- **Open** – free of charge and without any requirements; education material is modifiable and can be used again (McAuley, Stewart, Siemens, & Cormier, 2010)
- **Online** – internet (McAuley et al., 2010)
- **Course** – start date, end date, topic (Liyanagunawardena & Williams, 2014)
  
- 2011: ‘Artificial Intelligence’ by Sebastian Thrun had more than 160.000 participants of 190 countries (Ebner, Kopp, Wittke, & Schön, 2015)

(source: <http://my.mastersindigitalmarketing.org>)



# Enrolment of MOOCs

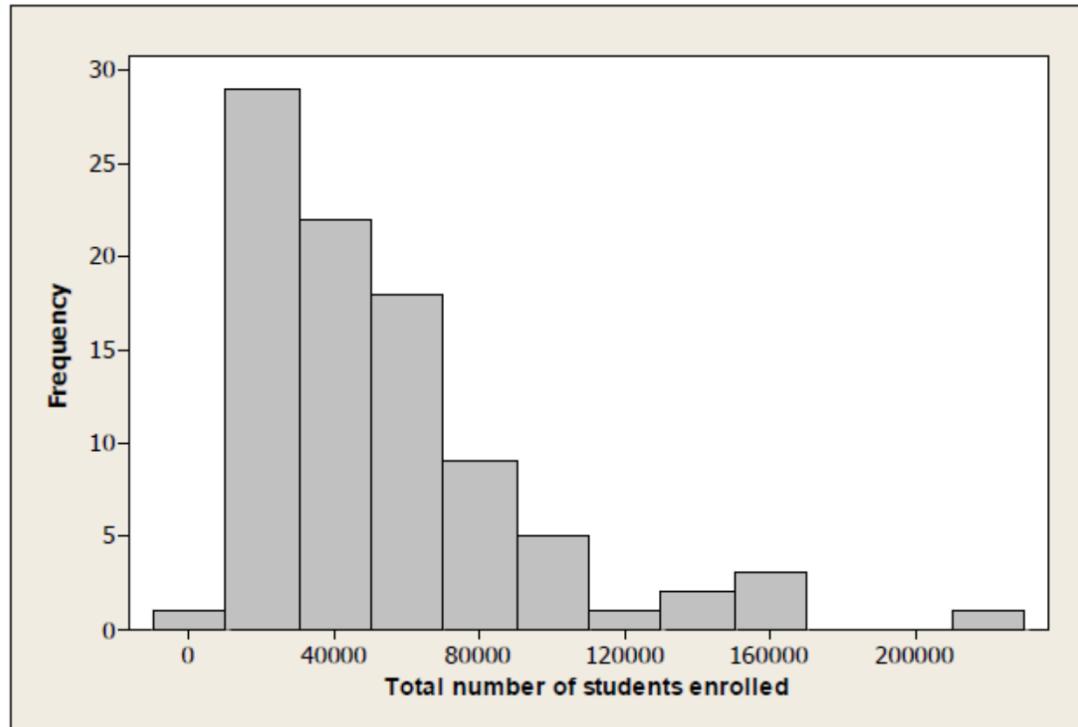
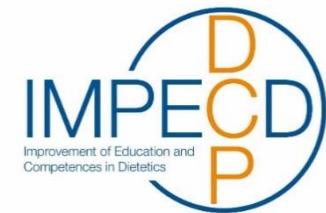


Figure 1. Histogram of total enrolment numbers for the sampled courses ( $n = 91$ ).

enrolment figures: 4,500 to 226,652 students  
median: 42,844 students

(Jordan, 2014)

# Completion of MOOCs

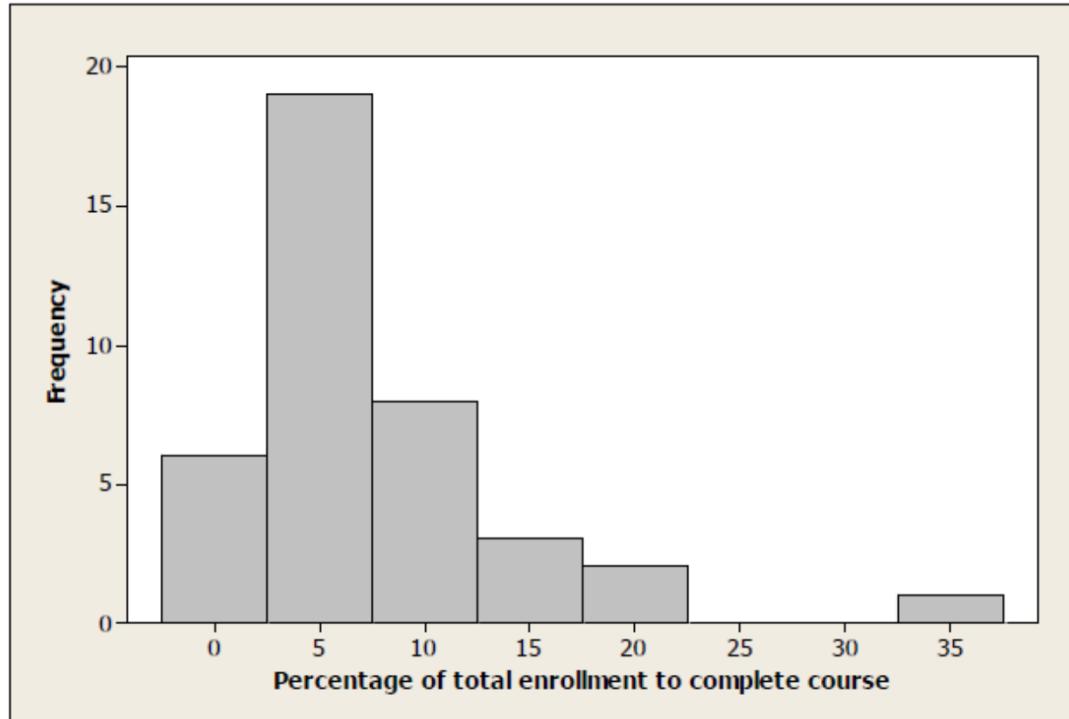
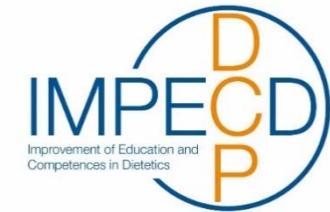


Figure 4. Histogram of completion rates for the sampled courses ( $n = 39$ ).

completion rate: 0.9-36.1%

median: 6.5%

(Jordan, 2014)



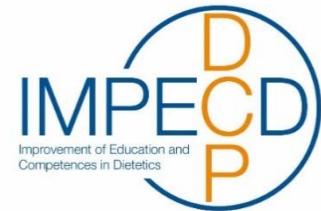
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# Types of MOOCs



## xMOOC (extension)

- similar to typical lectures e.g. video sequences
- no direct interaction between participants and teachers (exchange via social media sites) (Ebner, Scerbakov, & Kopp, 2015)

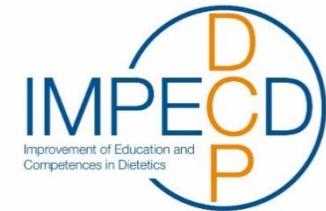
## cMOOC (connectivism)

- contents and inputs are designed by the participants (Wedekind, 2013)
- active participation of the participants in discussion forums and on social media sides
- course instructor = host and coordinator (Ebner, Kopp, et al., 2015) for e.g. online discussion forums (Siemens, 2013)

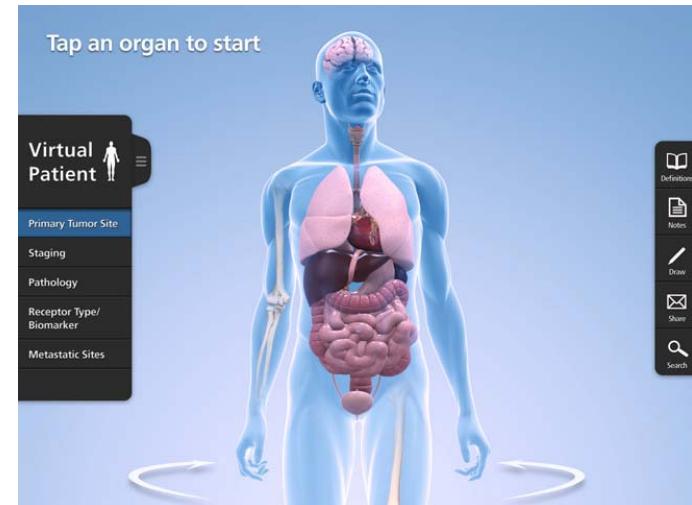
## bMOOC (blended)

- similar to a seminar
- classroom lecture at the university is extended – participants outside the university (Wedekind, 2013)
- benefit: online and face-to-face courses (Stark & Pope, 2014)

# MOOCs in Health Care Education

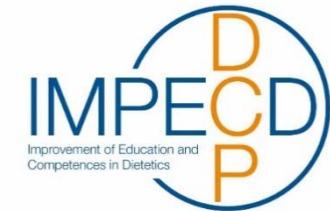


- potential to address challenges of the health care education (Mehta, Hull, Young & Stoller, 2013)
- virtual patients = “interactive computer simulations of real-life clinical scenarios for the purpose of health care and medical training, education or assessment” (Ellaway, Candler, Greene & Smothers, 2006)
  - evidence: effectiveness of training clinical reasoning skills (Consorti, Mancuso, Nocioni & Piccolo, 2012).
- technical and pedagogical perspectives are in the early stages of investigation (Liyanagunawardena & Williams, 2014)



source: <http://www.davidkuo.net>

# MOOCs in Dietetic Education?



- Analyses of MOOC aggregators, google
- [www.class-central.com](http://www.class-central.com)
  - terms: nutrition
  - language: German, English
  - target group/audience: dietitian, dietician, nutrition professional, nutritionist, registered dietitian, health professional, students of dietetic/nutritional science/health/medicine or similar
  - not: "no previous knowledge", "No specific background", "for everyone" or similar
- [www.mooc-list.com](http://www.mooc-list.com)
  - category: "Biology & Life Sciences" or "Food and Nutrition" or "Health & Society"
  - tag: nutrition
  - language: German, English
  - target group/audience: dietitian, dietician, nutrition professional, nutritionist, registered dietitian, health professional, students of dietetic/nutritional science/health/medicine or similar
  - not: "no previous knowledge", "No specific background", "for everyone" or similar
- google
  - terms: MOOC + dietetic, MOOC + dietetics, MOOC + nutrition

(Raffetseder, 2016)



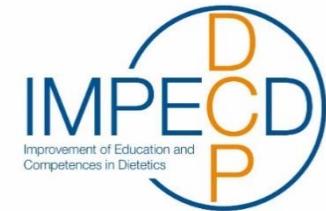
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# MOOCs in Dietetic Education?

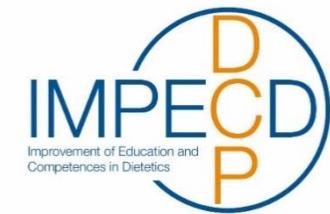


- Nutrition for Health Promotion and Disease Prevention
- Obesity: Causes and Consequences
- Exercise Physiology: Understanding the Athlete
- Vital Signs: Understanding What the Body Tells Us
- Diabetes: Diagnosis, Treatment, and Community
- Programming for Infant and Young Child Feeding (IYCF)
- Instructional Methods in Dietetic Professions Education
- Teaching and Learning Clinical Skills
- Improving Food Safety: Focusing on Quality and Safety
- Developing Food Bank Nutrition Policy to Procure Healthful Foods
- Developing a food bank nutrition policy: A guide to procure healthful foods
- Climate Change and Health

Not for Dietetic Care Process

(Raffetseder, 2016)

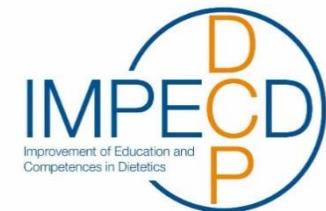
# MOOCs in Dietetic Education - Interviews



	<b>3 students</b> (6th semester; attended Inverted Classroom lectures)	<b>2 professionals</b> (dietitian for more than 20y; teaching experiences)
<b>general</b>	helpful	helpful
<b>advantage</b>	<ul style="list-style-type: none"> <li>• independence of time and place</li> <li>• free of charge</li> <li>• exchange with other students, professionals</li> <li>• improvement of English language skills</li> </ul>	<ul style="list-style-type: none"> <li>• independence of time and place</li> <li>• free of charge</li> <li>• exchange with other professionals</li> <li>• 'missing link' between theory and practice</li> </ul>
<b>obstacle</b>	<ul style="list-style-type: none"> <li>• sometimes English</li> </ul>	<ul style="list-style-type: none"> <li>• English</li> <li>• IT-knowledge</li> <li>• time</li> </ul>
<b>topics</b>	<ul style="list-style-type: none"> <li>• dietetic diagnose</li> <li>• intervention planning incl. calculation of energy/nutrients requirements</li> <li>• case topics: similar to the Austrian mandatory ones (gastroenterology, endocrinology, nephrology, oncology, surgery, intensive care)</li> </ul>	<ul style="list-style-type: none"> <li>• diabetes</li> <li>• metabolic Syndrome</li> <li>• oncology</li> <li>• nephrology</li> <li>• surgery</li> <li>• multimorbid patient</li> </ul>
<b>ideas</b>	<ul style="list-style-type: none"> <li>• quizzes, tasks (not part of grading)</li> <li>• forum, chats, emails → kind of reference material</li> </ul>	<ul style="list-style-type: none"> <li>• quizzes, tasks</li> <li>• e-mail reminders</li> <li>• glossary for specific terms</li> <li>• link to free online dictionaries</li> <li>• current guidelines and information</li> </ul>

(Raffetseder, 2016)

# Pros and Cons of MOOCs

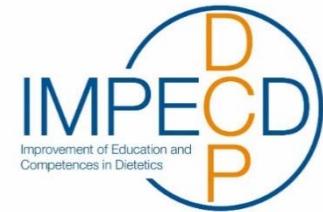


Pros	Cons
<b>For Participants</b> <ul style="list-style-type: none"><li>• Free, open to all, can enroll with no obligation to participate</li><li>• Wide range of topics available from top universities around the world</li><li>• Course interactions reflect a global student body</li></ul>	<ul style="list-style-type: none"><li>• Academic and continuing professional education credit rarely offered</li><li>• Many courses only offered during specific time frames</li><li>• Little or no direct interaction with instructor</li></ul>
<b>For Instructors</b> <ul style="list-style-type: none"><li>• Same effort can reach thousands or tens of thousands for global impact</li><li>• Repeat sessions less costly and time-intensive to deliver</li><li>• Course materials can be used to augment face-to-face instruction</li><li>• Experience can enhance reputation and teaching skills</li></ul>	<ul style="list-style-type: none"><li>• Time-consuming and expensive to produce with limited return on costs</li><li>• Delivery requires access to a MOOC consortium or other platform</li><li>• Little or no direct interaction with students and low completion rates</li><li>• Limited research to date on effectiveness of MOOCs to promote learning</li></ul>

Figure 1. Pros and cons of massive open online courses (MOOCs) for participants and instructors.

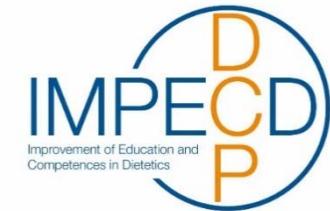
(Stark & Pope, 2014)

# Design Principles of MOOCs



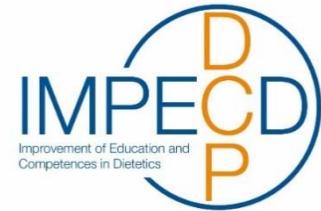
- clarity of explanations: using simple language and clear pronunciation  
(Abeer & Miri, 2014)
- visualization of abstract concepts: presenting multimedia features, pictures, animations, simulations  
(Abeer & Miri, 2014)
- good support, communication: forums, email messages, chat, virtual study groups  
(Kaplan & Haenlein, 2016; Abeer & Miri, 2014)
- variety of assignments: diverse ways for grading to accomodate different learning styles  
(Abeer & Miri, 2014)
- challenging and entertaining MOOC: competition and collaboration  
(Kaplan & Haenlein, 2016)
- providing control: asynchronous tasks, personalize interface  
(Kaplan & Haenlein, 2016)
- stay up-to-date  
(Kaplan & Haenlein, 2016)
- good teachers: charismatic, competent, ...  
(Kaplan & Haenlein, 2016)

# Prototype MOOC IMPECD



- cost-free and open solution
- a lot of university use moodle
- offer a broad variety of tools e.g. calendar, forum, wiki, different testing/evaluation tools
- connection to other tools is possible e.g. youtube
- Next steps
  - implement the first clinical cases
  - test the MOOC and the cases during Intensive Study Program in Antwerp 2017
  - improve the MOOC, clinical cases

# Challenges MOOC IMPECD



- keep participants motivated vs. obstacles
- user-friendly MOOC/course design features
- design appropriate dietetic cases around the DCP for 5 ECTS
- encourage teamwork and collaboration
- include all dimension of thinking skills, learning competences

(Abeer & Miri, 2014; Heer, 2012)

- costs/responsibility/quality assurance: cases, platform
- implementation in the curriculum
- assessment in online learning
- evaluation of the MOOC



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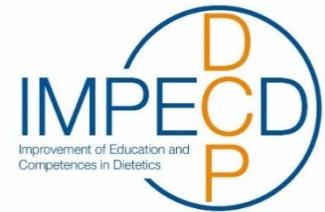


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# ....Thank you!



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