SECOND GO-GN SEMINAR
REPORT
APRIL 21 – 25. LJUBLJANA, SLOVENIA
GLOBAL OER GRADUATE NETWORK

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I am delighted to present the first e-book of the Global OER Graduate Network (GO-GN).

GO-GN is a worldwide network of PhD researchers and their supervisors in the field of OER, MOOCs, and Open Education. It has been initiated in 2012 and is coordinated by the UNESCO Chair in OER at the Open University of the Netherlands.

The idea behind GO-GN is to form an alternative for the common situation of individual PhD researchers doing their PhD study in ‘isolation’ at their home universities. GO-GN is linking them as they are based at different universities across country borders, and is offering the opportunity of a broader support and supervision by experts with different backgrounds. Typically a GO-GN PhD researcher will be supervised by a team of three experts from different institutions, chaired by the main supervisor from the PhD degree awarding university. We are facilitating this as we also can assist potential PhD students in search for an appropriate PhD degree awarding university. GO-GN is stimulating the sharing of PhD study practices and experiences and the development of working relations among its PhD researchers and supervisors. And we will guide our members towards courses that can be taken online in order to raise their competencies within the context of their PhD study. This all, of course, related to research in OER, MOOCs, and Open Education.

Currently GO-GN embraces more than 25 PhD researchers from different parts of the world, and the number is increasing. One of our major activities is to organize GO-GN Seminars, primarily meant to bring together PhD researchers but also including participation by supervisors. These Seminars are attached to important conferences or events in the field. The first GO-GN Seminar took place in December 2013 in Cape Town (South Africa), the second in April 2014 in Ljubljana (Slovenia) and the third one is coming up in November 2014 in Arlington/Washington (USA). These
have been funded by grants from the European Commission (DG Education and Culture) and the William and Flora Hewlett Foundation.

The dissemination of results of the GO-GN PhD researchers’ work takes its regular route along journal papers, conference presentations, and reports. In the near future we expect to set up a series of GO-GN webinars to be delivered by our PhD researchers in a specific niche in which they are strongly engaged. And this e-book is another example of how GO-GN is presenting the work done by its PhD researchers. It collects most of the contributions from the Ljubljana Seminar.

I would like to recommend you to experience the relevance and the broad scope of this first GO-GN e-book yourself. I hope you will appreciate the quality and promise of the e-book, and I am inviting you to contact the PhD researchers themselves in case you feel a cause.

Fred Mulder
Academic Coordinator GO-GN
UNESCO / ICDE Chair in OER at the Open University of the Netherlands
(Former Rector OUNL 2000-2010)
The present manuscript provides an overview on the topics presented by the PhD members during the second Global OER Graduate Network seminar.
Motivation

To analyze the potential of the communities of knowledge as an step forward of Massive Open Online Courses. To explore the possibilities of connected MOOCs from a Connectivist theoretical point of view, and compare the differences with xMOOCs will be the aim of this presentation.

Problem definition

Since 2008 many universities and institutions have delivered Massive Open Online Courses. But, are all MOOCs similar?. There are two types of massive online experiences, some put the highlight on the experience in scalability, named xMOOCs and
the others are more focused on student interaction and social learning, called cMOOCs. This article is a case study about a course delivered in two different platforms, one with more xMOOC features and the other with more social tools to enhance collective learning, more aligned with cMOOC experiences. This article aims to analyze if there are substantial differences between two MOOCs experiences regarding the student profile, the institutions which are delivering the course, and the potential differences between learning experiences associated to each platform cMOOC and xMOOC, from an empirical point of view.

**Aimed solution: Questions for Analysis**

The course of the study case analyzes with learning analytics and surveys from cMOOC platform and xMOOC platform if there are substantial differences between platforms. with the following questions for research:

1. Who is behind of the MOOC? Sociodemographic Profile of students
2. Why they register in a MOOC? Motivation
3. What is the level of drop out? Completion Rate and Certification availability
4. What is the level of Social participation in the online environment? Interaction with peers.
5. How students learn in a MOOC environment? Tools Used and learning style
6. How to measure MOOC success? Beyond the scalability of the online learning experience; Level of satisfaction and outputs (For students and Institutions)
7. Where are the MOOC borders?

**Expected Results**

There are some similarities between xMOOC and cMOOCs regarding:

1. Typical sociodemographic Profile: man, 25-35 years old, high education, worker and urban.
2. Motivation is similar: Interest in academic subject and job purposes (LLL)
3. The level of drop out in a MOOC could be linked with certification availability, much more than the type of Platform; More completion rate if there is a certification or badge at the end of the course (specifically in academic MOOC environments)
4. MOOC success must be measured beyond the scalability of the on-line learning experience; Level of satisfaction and outputs for students and Institutions must be taken in account in both experiences.

5. Language is the main enabler for internationalization of MOOC. The availability of a multilingual course enables more diversification in the nationality of the students, much more than the kind of platform.

There are some differences between xMOOC and cMOOCs regarding:

6. The traditional MOOC environment (xMOOCs) promotes less interaction between peers than communities of knowledge (cMOOCs).

7. Learning style in xMOOCs is more autonomous, and ICT and Social Tools in cMOOCs Platforms can enable more collaborative and interactive learning style and also more engagement with the community of knowledge.

Implications

There are no significant differences between cMOOCs and xMOOCs regarding student profile, motivation or level of dropout, but communities of knowledge fostered by cMOOCs are more adapted to Digital Era and maybe they will be an step forward of MOOCs creating a new virtual space for Higher education.
Higher education needs to respond to the increasing demand of knowledge and information sharing, and OER are developed as a response to this increasing demand.

Animal welfare is a discipline demanding educational efforts because of the following reasons: It is a rather new scientific domain of global interest; the global production of animal products is increased and intensified; increased incidences of regulations are placing high demands on farmers and citizens; and there is an enhanced societal concern for animal welfare. This global change has resulted in the adaption of a new paragraph in the Lisbon treaty and an action plan for education to all European citizens.

OER are developed for optimised information sharing through openness. Openness in the sense of technical and “for free” access and in this study even in the sense
of collectiveness; that you collaborate and utilize a collective expertise across cultural or contextual borders or activity systems.

The understanding of animal welfare is diverse between cultures, contexts and stakeholders. Education, and especially a collective way to conduct education, is argued to help getting a mutual understanding. Thus, education from primary to university level and including both formal and informal learning needs to be undertaken by means that underline dynamics and accommodate diversity.

However, in order for higher education to play a central role in these activities, some important pre-requisites need to be investigated. While activity theory suggests that a boundary object, like a mutual understanding of animal welfare, can be obtained through negotiations between activity systems; the tools, the rules and the division of labour within and between the activity systems are essential for the activities and the emerging object.

It is therefore of interest to map the availability of OER in animal welfare and how and why adoption of OER varies between teaching subjects, cultures, contexts, gender and teaching styles and how that is linked to teachers’ attitudes and subjective norms. Design-based research is used in a case study to develop a model for knowledge sharing in the interface between university and society. Furthermore, it is relevant to study teachers’ expectations on quality of OER such as for example accuracy and legitimacy. Finally, the peer reviewing process of OER will be studied.

Only few OER are available and only few universities develop OER within the subject of animal welfare. It seems like teachers’ attitudes play a role for adoption and that a subject or passion based community has important preconditions for the adoption of OER. The process of peer review and how to combine peer review with other measures in order to balance accuracy and legitimacy is discussed. Design-based research is used for studying a collective development of infrastructure and OER.

My findings support the idea that the activity theory can be used to get a better understanding of the potential development, quality and sustainability of OER in animal welfare through research on three levels: micro – analysing a peer review process, meso – surveying teachers’ attitudes, and macro – studying the design of an infrastructure and OER.
Motivation

The change from closed educational platforms to open learning environments, such as the case of MOOCs (Massive Open Online Courses) have been nothing more than the evolution of open education on the Internet that have made it possible for thousands of people to follow different educational initiatives.

The possibilities that Information and Communications Technologies (ICT) offer people with disabilities to improve their wellbeing and the possibility of their insertion into the work market, it is a fact that people with disabilities consider that the incorporation of ICT into the workplace has increased their work possibilities.
**Problem definition**

In order to achieve the minimum required level of accessibility in this type of platform, two significant aspects will have to be taken into account: Make possible and guarantee access to the content by means of the platforms and produce the content accessible in itself.

It is necessary to evaluate the access conditions of the student to the MOOC. The degree of usability of a series of Web services offered to the student will depend on the design of the user interface, of the interaction with the computer, and even the graphic design of the content. Finally using assistive technologies and adapt their presentation in accordance with the specific needs, it is necessary to offer alternative textual descriptions for multimedia content and assistance must be provided to those students who have encountered problems or barriers to accessibility.

**Aimed solution**

Finding a useful assessment methodology to see the weaknesses in accessibility: based on five different assessment approaches.

The methodology consists in a selection of a set of Web pages as a representative example of a platform and do the evaluation through:

1. automatic accessibility tools AAT
2. disability simulators DS
3. testing tools TT
4. usability criteria UC
5. educational content EC.

**Expected Results**

Measuring the success rate of the students belonging to vulnerable groups, make these results useful for each situation and provide additional accessibility related indicators to enrich OpenUpEd labelling.
Implications

There is a growing proportion of students who have an officially recognised disability who choose distance education universities for their studies, in the case of UNED the enrolment was 8,068 students in the 2012/2013 academic year, approximately 50% of university students with a disability in Spain. These students look for the so-called permanent learning or lifelong learning paradigm, which integrates education, work and personal life in a continuous process and allows the citizens to be able to access the knowledge and develop it both personally and through work. Therefore provide a standards-based methodology that is not a rule but a tool to improve educational platforms can help to improve the educational quality.
Many publications and surveys refer to the high drop out rate in MOOCs that is around 90% if we compare the number of students who register to the number who finish. However, many external factors outside the quality of the training delivery can be the reason for that such as free or low course fee, no enforced pre-requisites for participation, no recognized university credits, no penalty for exit, etc. Other factors could be the different reasons that motivate someone registering to a MOOC course such as just for curiosity, for accessing extra training content to a subject they are interested, for doing something more productive in their free time, for watching how specific faculties teach their subject, for getting more knowledge on a specific topic that they are interested in, for receiving a completion certificate, etc. Possibly the drop-out rate should be examined with respect to the different motivation factor of each participant and there is already continuous research in this area.
Nevertheless, there is no any significant research to examine the student engagement in MOOCs with respect to the structure of the training provided within a MOOC course. More specifically, it still remains unexplored to examine whether and what kind of assessments as well as the way that the feedback is provided to the students can affect the quality and impact (negatively or positively) to the MOOC students’ learning experience and consequently their engagement in the MOOCs.

**PhD Main Research Question.**

Therefore based on the above, the research question that my PhD will address is at what level various assessment and feedback methods (if any) applied in MOOCs impact the effect of students’ learning and consequently students’ engagement.

**Open issues/Research Aims**

My research main aims are linked with current open issues in regards to the deployment of MOOCS and their assessment approaches

**Open issue to be addressed**

Research Aims

No concrete knowledge on the applied assessment and feedback methods and their percentage of use in the MOOCs community (what kind of assessments and feedback and how much they are used)

1. Examine what kind of feedback and assessment methods as well as how much are applied in the MOOCs community

No concrete knowledge on the effectiveness of the assessment and feedback methods used in the learning process of MOOCs participants (for which assessment and feedback models, if any, it is evident that are engaging student participation and facilitate the acquisition of the expected learning outcomes in MOOCs)

2. Identify any relation between the feedback and assessment methods applied in MOOCs and the student engagement as well as the acquisition of the expected learning outcomes

No concrete knowledge on whether and which didactic factors on feedback e.g. time factor, feedback purpose and function, feedback specificity, feedback volume, feedback complexity, feedback type, feedback efficiency, learner characteristics, preparatory actions for self assessment etc. affect student's engagement and the acquisition of expected learning outcomes in the MOOCs
3. Identify any relation between didactic factors related to feedback and the student engagement as well as the acquisition of the expected learning outcomes

No concrete knowledge on suitable assessment and feedback models and recommendations for students' engagement and acquisition of expected learning outcomes in MOOCs

4. Describe suitable feedback and assessment models for student's engagement and acquisition of the expected learning outcomes in MOOCs.

**PhD Main Steps/methodology**

1. To analyse related literature and identify various assessment and normative feedback methods that can be applied in MOOCs

2. To analyse related literature and identify assessment and normative feedback methods as well as related didactic factors (e.g. time factor, feedback purpose and function, feedback specificity, feedback volume, feedback complexity, feedback type, feedback efficiency, learner characteristics, preparatory actions for self-assessment, etc) that may impact the learning experience in MOOCs

3. To analyse related literature and formulate what can be considered as student engagement/active participation in MOOCs

4. To prepare two questionnaires and request each to be completed respectively by the MOOC learners and MOOC team (trainers, instructional designers, tutors, course creators, etc) in order to a) examine which feedback and assessment methods as well as related didactic factors and at what level are applied in the MOOCs community, b) identify whether and at what level the identified assessment and feedback methods and didactic factors support the student's engagement and impact the acquisition of the expected learning students' learning experience in MOOCs

5. To collect and analyse the questionnaires’ responses and conclude which and at what level specific assessment and feedback models as well as related didactic factors a) impact the students’ learning experience in MOOCs and b) support the students engagement.
Gino Fransman

“Stakeholder Perspectives on the use of OER for contributing to development of graduateness: Case Studies of the University of SA (Unisa) and Nelson Mandela Metropolitan University (NMMU)”

Click here to watch the video lecture

This research presentation provides an overview of the undertaking towards exploring the use of Open Educational Resources (OER) to develop English proficiency, and therein to enhance aspects of graduate attributes. Initiated at the University of South Africa (Unisa) 2013, the transition to another institution (Nelson Mandela Metropolitan University/ NMMU) sees the research proposal needing significant reworking, along with a reformulation of essential aims and outcomes in the coming period.

Literacy is a big problem in South Africa, indeed, in Africa. Poor academic performance, deeply troubling attrition rates, as well as large numbers of unemployed youths in South Africa testify that there is a crisis in education. With compounding issues of access and financial constraints, there is an opportunity to use Open Educational Resources in a drive to provide high quality, free, easily accessible and relevant
This PhD research project asks: What is the potential of using English language-based OER to contribute to developing aspects of graduateness among students at Unisa and NMMU?

The primary research aim is to explore the potential of English language-based OER to increase students’ English proficiency levels during post-secondary study. The project’s anticipated contribution to graduate attributes is focussed upon supporting English language proficiency development, seen herein as a key gateway skill/attribute graduates should possess. Competence in English, the national medium of instruction and assessment in South Africa, is anticipated as enabling better access to and appropriate use of other learning or career support materials and resources.

This iteration of the evolving project suggests moving the initial study/ debate away from its broad exploration of attributes, and the general literacies aspects. Instead, the emerging aim is to refocus on developing English language proficiency, specifically in the context of remedial English programmes. In doing so, key areas to examine include (a) mapping the current production, use and effectiveness of English language-based OER at Unisa and NMMU; (b) mapping selected stakeholder perspectives and awareness on the production, use and effectiveness of English language-based OER; and (c) analysing and evaluating the Unisa and NMMU policy frameworks in creating enabling environments for the production and effective integrated use of OER for graduate development.

The examination of student and educator awareness (and their understanding) of terminologies used to describe, use & adopt OER and related practices forms part of an initial exploratory investigation, to be conducted at both sites. The results of a pilot survey conducted (in 2013 and 2014) at one of the two research sites provides some initial insight into areas of investigation in this presentation. It explores current awareness and use of OER, and was sampled amongst a cohort of English language students at the Johannesburg Unisa Regional Service Centre. An intended product emerging from this project is a toolkit comprised of OER resources which support and engage students toward better levels of competence in the English language, which will be available as an Open Educational Resource in itself.
Paula Cardoso

“Open Educational Practices in Public Higher Education in Portugal: from Theory to Practice”

The importance of knowledge sharing and the role of higher education systems in the current global economy of knowledge has been widely recognised in the last years, by initiatives and entities worldwide. Many Higher Education Institutions (HEI) have made technological investments in the past decades, but these have occurred within the dominant teacher-centred model, based on the unidirectional transfer of knowledge. However, the development of new models of distance education, and, more recently, the development of Massive Open Online Courses (MOOCs) have had an unprecedented popularity, which provides a unique opportunity to change the traditional paradigm, in particular in Higher Education, whose potential students are spread all over the world. Hence, the need for “opening up education”, as recognised by the European Commission in 2013. Within this background, the movements of Open Educational Resources and Open Access represent two of the major initiatives in
the context of Open Education and, more than a decade after their first steps, both have undergone a great evolution. Considering the fact that faculty career involves both teaching and research, it becomes essential to understand their specific role and to analyse their education and research practices in the light of these movements and their openness to knowledge.

**Problem Definition and Methodology**

The present research proposal is situated in the field of Open Education, addressing Open Educational Practices and Open Access in particular. The main objective of this PhD research is to identify and understand the education and research practices of teachers/researchers of public Higher Education Institutions in Portugal, as well as the influence of recommendations, initiatives and public support in the development of open educational practices.

The study involves three levels of analysis and will be conducted in three different stages, each with its own methodological approach, and each based on different research instruments. In the first stage we aim at identifying the recommendations, initiatives and support to projects by the European Commission and the Portuguese Government, mainly those targeting public HEI. Therefore, a documentary research will be carried out, with an analysis of all publicly available documents regarding open education and open access. In a second stage, data will be collected through a questionnaire survey, targeting institution representatives and teachers/researchers of all public HEI. The main dimensions and indicators will be based on the survey carried out by researchers in the previously mentioned OPAL project, concerning OER and OEP in Higher education and adult training institutions. The main objective of this questionnaire was to research the impact of OER and OEP in learning scenarios and educational institutions, as well as to analyse the decision makers’ strategies in supporting OEP. The questionnaire of this PhD research will also contemplate the issue of open access and the practices of researchers in Portugal; thus, the main dimensions and indicators will be adapted from a survey conducted in 2012 by the Documentation Services of Universidade do Minho.

A third and final stage of data collection has the objective of achieving a deeper understanding of the data collected in the previous stage, by means of focus groups. Even though the focus groups can ideally only be structured after analysing the data obtained, we believe that heterogeneous groups, consisting of both institutional representatives, as well as teachers/researchers will allow the different actors to exchange their different perspectives and enrich the discussion.
Expected Results

The revision of literature carried out so far has allowed us to see that there aren't many studies focusing on understanding Open Educational Practices, particularly within the framework of public guidelines and institutional context. Some Portuguese institutions have participated in international projects, but it is necessary to understand the current situation of the Portuguese institutions and their teachers/researchers in the movement of openness to knowledge.

At the same time, since the functions performed by teachers of Higher Education Institutions also includes the component of research, it seems relevant to also analyse the openness of their practices in research. A deep understanding of those practices is one of the aims of this PhD research.

Furthermore, we will also to be able to understand the extent to which the existence (or the absence) of initiatives and guidelines, at a European, national or institutional level influence the degree of openness of those education and research practices.
A story for refocusing: "A proposal for quality framework for MOOCs based on OERs and its application to Language MOOCs Courses"

Click here to watch the video lecture

The way traveled by a person who is doing his/her PhD project is plenty of problems and difficulties, but also there are sweet moments that at the very end compensate those who are not enjoyed with family and friends.

A few months ago someone told me that a PhD project is like a bumpy road where always come to us "crisis of faith". Those moments of crisis are inevitable, those are times when the applicant is questioned if his/her research will have a successfully completion, if all his/her personal sacrifices are worthwhile, if the physical and mental weariness will have as reward a final result that reflects all his/her effort and commitment. These experiences invite reflection, it is needed a continuous management of the researcher's self-motivation.
I must confess that some months ago I was involved myself in one of those "crisis of faith" and I knew I had to make a decision. Physical and mental weakness combined with lonely work are good ingredients for taking place a premature end of a research.

Thanks to my personal and professional interest in e-Learning quality, particularly in the field of languages, I realized the need of an e-Learning quality framework applied to languages and my PhD project was focused on that approach. But after a while, my personal evolution to Open Education movement and my experience as LLL student have reinforced the need of this story of refocusing, which has been materialized in Ljubljana.

MOOCKnowledge project and GO-GN Network have represented a significant change in the way of my PhD project, they are two unique opportunities, two sources of motivation, which are attractive enough to deal with a proactive and critical rethinking of my research, the beginning of a new way with the accumulated experiences of a first stage plenty of lonely "crisis of faith".

Ljubljana is a starting point plenty of questions and a parallel definition process both my PhD project and the MOOCKnowledge project. On one hand, this MOOCs project gives me the opportunity to access data from a wide set of MOOCs, including languages. On the other hand, my PhD project aims to make an in-depth analysis of issues that I hope could be of particular interest to the MOOCKnowledge project. Therefore, it could be very fruitful if this attempt of alignment between my PhD project and MOOCKnowledge project results finally in a symbiosis in order that both sides fully benefit.

The initial chaotic expectations are currently well defined, I can say that my initial proposal of an e-Learning quality framework applied to languages has finally been progressed to the study of Languages for General Purposes MOOC courses with the aim of the establishment of a list of recommendations for their successful design.

To date I can affirm that the implications of the scenario I have described are unknown for myself, but I can share with all of you that I feel privileged to belong to GO-GN Network, a place designed for exchanging and for progressing with the support of the whole network.
Motivation
This year’s Open Education Consortium global event in Ljubljana, Slovenia attracted a number of papers on the important issue of providing language support in open online learning. In addition to my GO-GN presentation, I presented a paper on flexible open language education for a multilingual world based on my collaborative research and development work with the FLAX language project at the University of Waikato in New Zealand. FLAX uses the open-source Greenstone digital library software for analysing and presenting easy-to-use language resources online. My primary motivation is to investigate how open corpus-based language learning systems like FLAX enhance OERs by linking them to open content and open datasets for the development of interactive language learning collections. My research involves partici-
pants from across multiple research sites in both formal and informal education who are engaged in the participatory design, development and evaluation of open online language collections for academic English.

**Problem Definition and Aimed Solution**

This research aims to successfully scale open corpus-based resources and approaches in language learning and teaching. This is in direct relation to issues of access with many existing corpus-based projects and concordance (text analysis) software tools. Accessibility is a key issue with the design and uptake of corpus-based tools and resources for uses in formal and informal language learning where the focus is primarily on teaching and learning and not on linguistics research. Arguably, issues with access to corpus-based resources for improving language proficiency among learners and for increasing technical know-how among instructors are related to both cost with resource subscriptions and to complexity with resource design. As many existing corpus-based tools and resources stem from niche research and development projects designed by and for corpus linguistics researchers, and because many of them are proprietary resources, there has been little in the way of access and support with corpus-based resources and approaches in language learning and teaching.

**Research Hypotheses for Analysis**

I have repurposed existing OER research instruments (surveys, interview/focus-group questions and think aloud protocols) from the OERRH research bank to collect data on the following revised OER hypotheses from the Hewlett Foundation for language education using the FLAX collections:

- Hypothesis A: Use of OER-based language collections leads to improvement in student performance and satisfaction.
- Hypothesis E: Use of OER for developing language collections leads to critical reflection by language educators, with improvement in their practice.
- Hypothesis K: Informal means of MOOC assessment are motivators to learning with OER language collections.
- Hypothesis H: Informal MOOC learners adopt a variety of techniques to compensate for the lack of formal language support.
- Hypothesis I: Open education acts as a bridge to formal language education, and is complementary, not competitive, with it.
**Expected results**

Increased language acquisition in domain-specific areas, for example, law and microbiology, is expected with participants engaged in this research who are registered either in traditional university programmes or in MOOCs. Increased efficacy with open educational resources and practices among language teachers and subject academics engaged in the design, development and evaluation of open language collections is also expected. By disseminating this research and development work with the FLAX project and the OERRH through open promotional channels, it is anticipated that open resources and practices for language learning and teaching will be realised across both language education and open education communities of practice. Results from this research will also be shared on the OERRH’s impact map.

**Implications**

Open online systems and resources like the language collections in FLAX have unique characteristics and challenges with regards to diffusion, adoption and integration compared with commercial initiatives by well-known language course book publishers, which still dominate the English Language Teaching resources market. Understandings will be captured and presented from my research with FLAX and the OERRH, as well as from the wider literature on open education, regarding participants’ perceptions and interactions with these open educational systems, as they exist and as we are designing them in this research.
Regarded as a strategic partner in the Open Educational Resources (OER) movement, Higher Education (HE) has been impelled to openness, considered a priority field of action and research, with exponential growth of resources and initiatives. Despite the potentials and benefits foreseen around OER in HE, transversal challenges remain unaddressed worldwide, such as awareness raising, creation and strengthening of collaborative networks, capacity development and research. Moreover, literature underlines the need of expanding OER adoption in HE at the institutional and individual levels, the support to its agents, and developing in-depth knowledge of such processes. Despite the current approaches to support HE institutions in OER adoption, there is a growing demand of research and practices towards more contextualized-comprehensive approaches, particularly, in non-dominant realities.
Collaboration, at an institutional level and between institutions is regarded a key-element in OER adoption; although it remains highly challenging, with reduced number of approaches and scarce knowledge around their implementation.

Such scenario seems to be common to Portuguese and Mozambican Higher Education, contexts proposed for the current research. In fact, despite evident progresses in open access, and the participation in some projects concerning OER, there is a lack of in-depth research about the use, reuse, sharing or creation of OER. No relevant studies around these issues were identified and evidences reported evidences are scarce. Moreover, no specific approaches for each country’ HE nor evidences of collaboration/cooperation between Portuguese and Mozambican HE towards OER are known. Existent tradition of partnerships between both countries in connected subjects, language and cultural factors, as well as the growing demand of OER in Portuguese language, are drivers for collaboration paths around OER in these countries.

Considering this, supported on a qualitative approach, we intend to conduct a multi-case study, oriented by the main research question: “How are OER being used in Portuguese and Mozambican Higher Education institutions and what collaborative model(s) can be adequate to its promotion and adoption, at the institutional level and teaching practice?”. The study has three main goals: 1) Contribute for the knowledge about OER use; 2) Understand collaborative practices relevant for OER use; and 3) Conceive a collaborative model aiming to promote OER use in study contexts. The study will be implemented in two universities (one Portuguese; one Mozambican), with four actors: institutional leaders, teachers, key-staff (library, ICT, teacher training,…), and external experts, as validators of research instruments and results. The study comprises five phases, across 36 months: 1) Literature review; 2) Creation & validation of data collection instruments; 3) Data collection and analysis; 4) Creation of the collaborative model; and 5) Thesis writing ad conclusion of the study. The collaborative model constitutes the main result. Based on theoretical and empirical evidence gathered on the field, it is expected to be a comprehensive tool for promoting and supporting the use of OER in HE, created by its agents, based on intra/interinstitutional collaboration, considering: specific issues around awareness, use and creation of OER, role of different actors, thematic domains and contextual particularities, possibly being useful to Portuguese speaking countries.
The following research questions are central in this PhD study:
1. What key OER policy instruments can be identified with different IOs?
2. What impact have these key IO OER policy instruments on governmental OER policies?
3. What recommendations, if implemented, would lead to IO OER policies and policy instruments more effectively supporting governmental OER policies?

**Context**

In the context of widespread budget cuts and the growing demand for education, governments and education institutions are searching for new and innovative ways to address the growing demand for education. It has been argued by various authors that OER can contribute to this agenda by making education more accessible, affordable,
efficient, of better quality and sustainable while, at the same time, contributing to wid-
ening access to education and expansion of life long learning opportunities. It is in
this context that we see an increasing number of governments in different parts of the
world and IOs proposing or developing strategies, passing declarations or recommen-
dations, or approving policies related to OER.

National policy making is still largely mediated by national politics and tradi-
tions. However, as may be concluded from the literature, it is increasingly linked to
globalized policy discourses and pressures from International Organizations (IOs)
such as Intergovernmental organizations (IGOs), International nongovernmental or-
ganizations (INGOs) and/or global policy networks. National policy makers are con-
nected to policy makers at IO levels. IGOs such as UNESCO, OECD, COL, EU, and oth-
ers play an important role in policy developments at national levels and hold govern-
ments accountable against international benchmarks or indicators. To this end, it has
been argued that IOs are increasingly seen as policy actors as opposed to just policy ad-
visors or mediators. While there appears to be a consensus about the influence of IOs
on national policy making little is known about whether and how these IOs’ influences
translate into concrete national policies or how they affect national policy making in
general.

**Methodology**

Impact of IOs on governmental OER policies will be studied retrospectively,
since 2007 (with India’s initiating position), as well as during the period 2014 – 2017.
The following IOs (in alphabetical order) will be included in the study:

1. **IGOs:** Commonwealth of Learning (COL), European Commission (EC), Or-
ganization of American States (OAS), Organization for Economic Co-operation and De-
velopment (OECD), Organization Internationale de la Francophonie (OIF), United Na-
tions Educational, Scientific and Cultural Organization (UNESCO) and World Bank
(WB).

2. **INGOs:** Creative Commons (CC), Open Education Consortium (OEC) and
more.

IOs possess a range of policy instruments with which they influence education
policy context at global and national levels. These include but are not limited to issu-
ing guidelines, declarations and recommendations, advocacy, producing policy reports
and providing policy advice, providing financial support through loans and funding ini-
tiatives, data collection and analysis (R&D) or sponsoring and organizing
international/regional conferences, meetings and networks. Protocolled interviews
with representatives from IOs will serve to identify the key OER policy instruments at IOs level and to explore the intended and observed impact of such instruments on national OER policy making (answering research question 1).

Furthermore, the research will also explore the impact of several foundations such as Hewlett Foundation, Open Society Foundation, Shuttleworth Foundation, and others on governmental OER policies. Foundations have been playing an important role in the OER field by providing initial seed funding for many OER initiatives. With relatively small amounts of funding they have been making notable contributions to OER developments around the world. For example, in some cases, initial OER projects, funded via such foundations, fueled nation-wide OER initiatives (such as the national OER initiative in the Netherlands called Wikiwijs that started in 2009).

The governments included in the study represent a sample of 4-6 countries per geographical region, taking into account progress made with governmental OER policies to date as well as jurisdictions (provincial/state, national). Protocolled interviews with government representatives will serve to analyze the (perceived) impact of the key IO OER policy instruments on governmental OER policies (answering research question 2).

Based on the findings from research questions 1 and 2 the study will provide recommendations that would lead to IO OER policies and policy instruments more effectively supporting governmental OER policies.
Self-organized lifelong learning is one of the critical competences for individuals to cope with societal challenges and resulting changing demands on job markets. A survey by the European Commission has identified time, location and conflicts with other activities as the core barriers to lifelong learning.

**Problem statement**

Lifelong learners are confronted with a broad range of activities they have to manage everyday. In most cases they also have to merge learning, working, and everyday life throughout the day. For the support of lifelong learners their daily practices and learning patterns are of importance. Lifelong learning includes a variety of different educational scenarios and contexts in which learners operate. These contexts include traditional formal programs, non-formal education, on the job-training and in-
formal, accidental learning. Fischer even values lifelong learning as a mindset that people have to acquire including the following learning scenarios: self-directed learning, learning on demand, collaborative learning, and organizational learning.

One of the most critical challenges for the implementation of lifelong learning is to integrate real world problems and learning in the same process. To give efficient access to services and link the different activities together Wong & Choi have identified ten seams by, which learning experiences are disrupted today and for which mobile seamless learning technology has to find new solutions. The identified ten gaps in seamless learning support are of high relevance for lifelong learners. When adopting the questions of seams in the learning and living support of lifelong learners several key aspects have to be highlighted that are essential problems for today’s lifelong learners:

In summary there is little support for lifelong learners that typically try to learn in different contexts, are busy with multiple parallel learning tracks over longer periods of time, and must align or relate their learning activities to everyday leisure and working activities. Nevertheless a strength of lifelong learners is their intrinsic motivation for study, so the direct integration of study outcomes to work related activities or every day environments is essential for their continuous career development. The observations on the lifelong learning process indicate that typical learning activities of continuing and further education are poorly connected to the daily activities of the learners. Furthermore, existing technological infrastructures that are in the reach of the learners are mostly unused or are fragmented in the learning process.

**Research questions and hypothesis**

The proposed research focuses on the development of integrated personal learning ecologies for connecting formal and informal learning. Learning ecologies are integrated information technology devices and objects that are present in the physical environment of learners and couples these devices and objects with learning activities.

The objective of this research is to understand personal learning ecologies. The develop artefacts and software prototypes will allow the implementation of educational designs in which the learners connect informal learning experiences with formal learning activities in and across contexts.

The combined use of multiple device types is often considered as a problem of adapting information to the appropriate output channel. In many cases it is presumed that learners interact only through a single channel or device. However, in personal
learning ecologies the technological framing changes and can vary from single device interaction to the presence of multiple devices with different characteristics and capabilities that are used simultaneously.

Three main requirements for the combined and simultaneous use of several devices and information channels guide this research. Firstly, the devices need to be aware about the other devices and interfaces that are present in the same setting. Secondly, an underlying educational design needs to be defined in a way that it can make use of multiple interfaces or information channels. Thirdly, interfaces must get appropriately integrated in order to facilitate seamless interaction in a personal learning ecology.

These research problems need to consider mobile learners who change their technological ecology multiple times a day. This requires the underlying system to be aware about the ongoing changes of the available infrastructure and to be adaptive with regard to the cues and channels that can be used for supporting learning.

**Current state of the investigation**

This research has resulted in the following publications.

- A questionnaire to 147 lifelong learners with the aim to analyse learning practices of adults, and to recognise patterns of lifelong learners in order to support them with technology. These patterns capture the context in which lifelong learners are more willing to learn, that is, the day of the week, duration, location activity being performed, type of device being used, way to interact with their devices and how these aspects can affect when an adult student takes the initiative to learn.

- A formative study aiming to explore the use of mobile technologies to foster reflection on meta-learning.

- Sampling of learning preferences on mobile devices are key benchmarks for lifelong learners to become aware on which learning task suits in which context, set realistic goals and set aside time to learn on a regular basis. The contribution of this manuscript is twofold: first, a classification framework for modelling lifelong learners’ preferences is presented based on a literature review; second, a mobile application for experience sampling is piloted aiming to identify which are the preferences from lifelong learners regarding when, how and where learning activities can be integrated.

- A trend report exploring learning content repositories’ support to mobile devices

The following manuscripts are under review:
• “Mobile authoring of open educational resources for authentic learning scenarios”. A situated learning tool for authoring learning contents.
  • “Can mobile notifications be used to foster reflection on meta-learning?“. An experiment involving 60 participants with the aim to get insight on the use of mobile notifications to foster reflection in-action.
  • “Seamless support for lifelong learners with mobile and sensor technology”. Presentation of a mobile tool for self-regulated support with learning analytics.
  • “‘Tap it again, Sam’: harmonizing the frontiers between digital and real worlds in education. A review on NFC technologies for learning and prototyping of the 3LHub Digital Media Display

**Future work and contribution**

The observations on the lifelong learning process indicate that typical learning activities of continuing and further education are poorly connected to the daily activities of the learners. There is no support for learning activities across locations, devices and environments and there is a need to provide customized feedback to lifelong learning activities. New tools will be developed to track when, where and how learning occurs along the day, and, to provide rich information for lifelong learner’s to build their autobiography as a learner. These tools will lead lifelong learners towards a self-regulated process: fostering awareness on learning goals and learning moments; facilitating the user to keep track of learning time with a natural interface; fostering engagement and motivation on the task providing feedback with useful statistics. These implementations will be developed upon the Lifelong Learning Project (3LHub), a recently released open licence project with the aim to foster its adaptation to further educational communities.

Recent work investigates on how to provide feedback on the best next step based on past choices of successful lifelong learning experiences. In further research, we will investigate cues for lifelong learners to improve their learning performance using the patterns identified in LearnTracker in order to provide seamlessly integrated feedback via ambient learning displays and reflection amplifiers. Additionally, services coexisting in smart learning environments will be orchestrated to provide customized feedback based on the learning task being performed (read, write, listen or watch), and to support adults in the key competence for lifelong learning: “learning to learn”.

This research aims to bridge scattered personal learning environments in which learners can define their personal ecosystem and experience the interaction with such a system in long term typical lifelong learner settings. This research aims at giving an
open, flexible and low-cost prototyping framework for defining and linking everyday learning activities to contexts, physical artefacts, everyday home media solutions, and supporting to link sustainable learner tracks to these components.
Many organisations involved in Open Education claim they have an Educational Ecosystem up and running. The usage of the term ecosystem is often not underpinned by evidence and theory but used as a metaphor only. If the term would be used with available theoretical underpinning it is expected that better and more sustainable systems could be designed and set up.

Some authors focus on only one aspect of the ecosystem: instructional design, curriculum design, the use of educational technology, or organisational setup. Other authors emphasize that a comprehensive approach is needed that takes into account each of the above aspects to yield sustainable results. A comprehensive Educational Design methodology approach could make this work. The research aims at determining if and how this can be done.
The scope of the research is limited to the target population of neuroscience nurses and their direct colleagues, their teachers and their educators.

Neurological disorders are the third cause of death after cardiological disorders and cancer. Many well educated neuro-nurses are needed to care for neuro-patients. From research it is known that on a worldwide level a tremendous training need for neuro-nurses exists. A good educational system is not yet in place in many countries, there is a huge variety in amount and quality of training, and many nurses are caring for neuro-patients without any form of appropriate training.

The research builds forth the NeuroBlend EU project and the Global Education Initiative for neuroscience nursing. NeuroBlend produced a European framework for open and blended education for neuroscience nurses and Open Educational Resources. The Global Education Initiative produced a vision on open educational services which are required on a worldwide scale, and a grid for a 10 year working plan.

In 2013 the NeuroBlend Foundation (NF) was announced by EANN, WFNN and the Radboudumc. NF has set as its goal to provide for Open Educational Resources and Open Courseware which will be gathered, produced and disseminated through a worldwide Open Education Ecosystem. The context and case in which the research is carried out is the design and set up a sustainable organisational structure for the NF (the Open Education Ecosystem).

Four theoretical approaches to the term ecosystem are used in literature and in daily educational practice as a metaphor, as in biology (later transferred to educational science, business science and ICT), as in educational technology and as in complex systems theory.

Four main research questions will be answered:
(1) how to design a sustainable open education ecosystem?
(2) which design variables are to be taken into account?
(3) Which approach to designing educational ecosystems is most applicable?
(4) Are research findings transferable to other domains?
The research will be carried out using the method of Educational Design Research (EDR). Using this method a design for the open education ecosystem will be developed in two to three iterative cycles (years).

In the final stages of this research the question will be answered if and to which amount the research findings are generalisable to other areas inside or outside of healthcare.
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GLOBAL OER GRADUATE NETWORK

ORGANIZATION

Fred Mulder
Academic Coordinator
UNESCO / ICDE Chair in
Open Educational Resources

Robert Schuwer
GO-GN Manager

Bernardo Tabuenca
Community Manager

Jos Rikers
GO-GN Manager

Marina Pongraz
Secretary

Postal address: PO Box 2960,6401 DL Heerlen,The Netherlands
Visiting address: Valkenburgerweg 177,6419 AT Heerlen,The Netherlands
GLOBAL OER GRADUATE NETWORK

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Edition:
Bernardo Tabuenca

Pictures:
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“Education is the most powerful weapon which you can use to change the world.”
~ Nelson Mandela

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