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ARTICLE

New Pathways to Learning: Leveraging the Use of OERs to Support Non-formal Education

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Abstract

The growth of non-formal education is expanding teaching and learning pathways for the delivery of global education. This growth, in concert with the expanded use of Open Educational Resources (OERs), is creating a potential synergy between non-formal education and OERs to strengthen the continuum of education and training for people who live in underserved and economically disadvantaged regions of the world. The author’s central theme is that OERs provide a valuable educational resource for use in non-formal education that needs to be expanded, researched and refined. OERs are not formal or non-formal resources. Rather, it is how OERs are used in formal and non-formal education settings that define their context and application for teaching and learning. A

basic conceptual framework is provided to offer the reader an initial approach for conceptualising the use of OERs in non-formal education. The author suggests that the process for evaluating non-formal educational activities is similar to the basic design principles used in formal education. These include identifying goals, objectives and competency-based outcomes; developing instructional design parameters; analysing the context and culture of instruction; and evaluating and measuring non-formal teaching and learning. Moreover, the author advocates that further research on OER use in non-formal education, in concert with visionary university leadership, will be critical to maximising the potential of using OERs in non-formal education. The final summary highlights the key issues and points of the article.

Keywords

non-formal education, open educational resources, formal education, distance education, e-learning

Nuevas líneas de aprendizaje: potenciar el uso de recursos educativos abiertos para reforzar la educación no formal

Resumen

El desarrollo de la educación no formal está expandiendo las líneas de enseñanza y aprendizaje de la prestación global de servicios educativos. Esta expansión, junto con un mayor uso de recursos educativos abiertos (REA) está generando una potencial sinergia entre la educación no formal y los REA para reforzar la formación y el aprendizaje en todas las etapas educativas de las personas que viven en regiones marginadas y económicamente desfavorecidas. El principal argumento del autor es que los REA constituyen un valioso recurso educativo para la educación no formal que debería expandirse, investigarse y perfeccionarse. Los REA no son recursos formales o no formales por sí mismos, ya que lo que define su contexto y su aplicación a la docencia y al aprendizaje es la forma en que se usan en entornos educativos formales y no formales. Este artículo facilita el marco conceptual básico para conceptualizar el uso de REA en la educación no formal. El autor sugiere que el proceso para evaluar actividades educativas no formales es similar a los principios básicos de diseño utilizados en la educación formal, entre los cuales están la identificación de objetivos, finalidades y resultados basados en competencias; el desarrollo de parámetros de diseño pedagógico; el análisis del contexto y la cultura pedagógica; y la evaluación y medición de la docencia y el aprendizaje no formal. Además, defiende que investigar el uso de REA en la educación no formal, junto con un liderazgo universitario visionario, será esencial para maximizar su potencial en la educación no formal. En el resumen final se destacan los principales puntos y temas tratados en el artículo.

Palabras clave

educación no formal, recursos educativos abiertos, educación formal, educación a distancia, aprendizaje virtual

Introduction

Over the past decade, the growth of open educational resources (OERs) has leveraged the use of open content across the education continuum, from primary education to higher education to lifelong learning (Butcher, Kanwar & Uvalić-Trumbić (2011). Until recently, OERs have been primarily used by educators as supplementary resources to formal, credentialed education. OERs have, in fact, been used very effectively in non-formal education to provide individual self-directed learning for the acquisition and mastery of basic life skills (Latchem, 2012).

We have seen innovative non-formal applications of OERs in Sub-Saharan Africa and other developing countries to teach basic nutrition, health, HIV prevention, food and safety, and other fundamental life skills to underserved populations that often face extreme poverty, malnutrition, disease and the ravages of living in a conflict zone (Latchem, 2012; TESSA, 2012). Moreover, whilst the non-formal use of OERs may not lead to an advanced university degree or mid-management employment, they potentially may contribute to the preservation and sustainability of human life for underserved populations in developing nations. Indeed, OER uses in non-formal education settings are innovative and powerful educational tools that can have a positive impact on individuals, families and communities.

Today, OERs are increasingly used for non-formal purposes in remedial and adult continuing education, and for formal purposes to earn academic credit leading to a formalised credential (Green, 2012; Latchem, 2012). From a digital or open and distance learning (ODL) vantage point, the use of OERs ranges from supplementing formal university instruction to educating youth and adults in non-formal education settings using various social media applications (e.g., Facebook, LinkedIn, MySpace, etc.) and networked learning applications (e.g., Wikipedia, Twitter, interactive blogs, online learning communities, etc.) (Latchem, 2012; McGreal, 2012). Indeed, it is important to recognise that this vast continuum of OER use in face-to-face and virtual settings, as well as in formal and non-formal education settings, often creates both definitional and applied challenges for practitioners. This will be discussed later in the article.

Purpose and Scope

The central theme of this article is that OERs provide a valuable resource for use in non-formal education settings. OERs are not formal or non-formal educational content. Rather, it is how OERs are used in formal and non-formal education settings that define their context and application for teaching and learning. Indeed, an illustration of this important distinction may provide greater understanding and clarity for the reader from the outset.

Let's examine a three-page summary OER covering Ernest Shackleton's expeditions to Antarctica. This particular OER could be developed from multiple disciplines including history, geography, engineering, economics and leadership, and from a range of other interdisciplinary content. In a formal university setting, this OER could be used to engage MBA postgraduate students in a

discussion about the key attributes and lessons of leadership. Conversely, this OER could be used for non-formal education in a rural community setting in Kenya to teach English and/or history to primary and secondary students. Whilst this is a basic example, it illustrates the critical distinction between the specific learning objectives and outcomes that are the driving pedagogical factor(s) in using OERs in non-formal and formal education.

The first section of this article will provide a definition of non-formal education from the literature, the author's analysis of the definitional continuum, and a brief review of key issues from the literature. This section will also discuss how ODL systems increase the complexity of the definitional boundaries of non-formal education.

The second section will define OERs and provide a brief summary of their advantages and limitations. Although the focus of this article is on OER use in non-formal education settings, it is not intended to cover all facets of OERs in depth. The OER literature is immense and the scope of coverage contained herein is aimed at accentuating their relevance to use in non-formal education settings.

The third section of this article attempts to provide a conceptual framework for OER use in non-formal and formal education. Indeed, this can be tricky terrain for an author to transverse unless the purpose of including the framework helps the reader reflect upon their own practice and strategies for improving teaching and learning in non-formal and/or formal education settings. The rationale for presenting the framework is twofold. Firstly, most educators' primary frame of reference to their profession is formal education settings such as schools, colleges and universities. In one sense, it is our baseline for assessing teaching and learning in other settings and for other purposes beyond earning a 'formal' credential. By understanding this frame of reference of formal education, it may expand our analyses and approaches to non-formal education. This preliminary framework is not definitive yet may provide a guide to expanding our understanding of a particular set of assumptions for OER use in non-formal education. Secondly, the framework is presented to expand dialogue and reflection from across the professional community for future research and refinement of OER use in non-formal education. It was previously mentioned that the advances in ODL delivery systems such as social media alter and expand the definitional and applied context of OER use in non-formal education settings. This framework needs the collective intervention and ideas of researchers and practitioners to improve its usefulness for educators. Indeed, initiating the dialogue is sometimes an invaluable starting point in our quest for refinement and practical use.

The final section identifies questions for future research and leadership opportunities for universities. The summary highlights the key points of the article. Appendix A provides a list of recommended OER resource websites for readers.

Section I: Non-formal Education

From Definition to Practice: A Selected Review of Literature

At first glance, defining non-formal education would appear straightforward by differentiating it from formal education. This is not the case. The challenge is that a range of other definitions

of learning (adult education, informal education, self-directed learning, flexible learning, second chance education, incidental or random learning, e-learning, distance learning, etc.) often overlap and create more confusion than clarity in an operational context for empirical uses of non-formal education (UNESCO, 2011; Latchem, 2012). Although it is beyond the scope of this article to engage in a detailed definitional analysis of all these various forms of learning, it is important for the reader to understand that definitional differences do exist; some overlap whilst others appear to differ on key points.

UNESCO developed the International Standard Classification of Education (ISCED) to facilitate comparisons of education statistics and indicators across countries on the basis of uniform and internationally agreed definitions. In 2011, a revision to ISCED was formally adopted by UNESCO Member States. The product of extensive international and regional consultations among education and statistics experts, ISCED 2011 takes into account significant changes in education systems worldwide since the last ISCED revision in 1997. These revisions provide definitions and updates of formal education, non-formal education and informal learning; ISCED also excluded informal, incidental or random learning from its data gathering matrix. The first data collection based on the new classification will begin in 2014. The UNESCO Institute for Statistics is working closely with Member States and partner organisations (such as OECD and Eurostat) to map education systems to the new classification and revise collection instruments.

Given that most educators are familiar with formal education, an international definition of formal education will help set non-formal education in the appropriate context. UNESCO (2011, p. 8) defines formal education as follows:

36. **Formal education** is defined as education that is institutionalised, intentional, planned through public organizations and recognised private bodies and, in their totality, make up the formal education system of a country. Formal education programmes are thus recognised as such by the relevant national educational authorities or equivalent, e.g. any other institution in co-operation with the national or sub-national educational authorities. Formal education consists mostly of initial education. Vocational education, special needs education and some parts of adult education are often recognized as being part of the formal education system. Qualifications from formal education are by definition recognised and are therefore within the scope of ISCED. Institutionalised education occurs when an organisation provides structured educational arrangements, such as student-teacher relationships and/or interactions, that are specially designed for education and learning.

37. Formal education typically takes place in institutions that are designed to provide fulltime education for pupils and students in a system designed as a continuous educational pathway. This is referred to as initial education defined as formal education of individuals before their first entrance to the labour market, i.e. when they will normally be in full-time education.

38. Formal education also includes education for all age groups with programme content and qualifications that are equivalent to those from initial education. Programmes that take place partly in the workplace may also be considered formal education if they lead to a qualification that is recognized

by national educational authorities or equivalent. These programmes are often provided in cooperation between educational institutions and employers (e.g. apprenticeships).

From the ISCED definition, the key elements of formal education are as follows: it is institutionalised, intentional and planned through public organisations and recognised private bodies; these organisations are recognised by relevant national education authorities or equivalent; qualifications obtained in formal education typically are part of a national qualifications framework; formal education typically occurs in institutions that provide full-time education (schools, colleges, universities, etc.), normally as part of continuous education pathways, from initial education to entrance to the labour market; and workplace programmes that lead to a qualification recognised by a national authority may be considered formal education.

A glaring omission in these definitional attributes is there is not even a passing reference to the use of ODL systems in the delivery of formal education. This is relevant to the current discussion of OERs and non-formal education, and the author will return to this later in the paper.

UNESCO (2011, pp. 8-9), within its ISCED framework, defines non-formal education as follows:

39. Like formal education, but unlike informal, incidental or random learning, **nonformal education** is defined as education that is institutionalised, intentional and planned by an education provider. The defining characteristic of nonformal education is that it is an addition, alternative and/or a complement to formal education within the process of the lifelong learning of individuals. It is often provided in order to guarantee the right of access to education for all. It caters for people of all ages but does not necessarily apply a continuous pathway-structure; it may be short in duration and/or low in intensity; and it is typically provided in the form of short courses, workshops or seminars. Nonformal education mostly leads to qualifications that are not recognised as formal or equivalent to formal qualifications by the relevant national or sub-national educational authorities or to no qualifications at all. Nevertheless, formal recognized qualifications may be obtained through exclusive participation in specific nonformal educational programmes: this often happens when the nonformal programme completes the competencies obtained in another context.

40. Depending on the national context, nonformal education can cover programmes contributing to adult and youth literacy and education for out-of-school children, as well as programmes on life skills, work skills, and social or cultural development. It can include training in a workplace for improving or adapting existing qualifications and skills, training for unemployed or inactive persons, as well as alternative educational pathways to formal education and training in some cases. It can also include learning activities pursued for self-development and thus is not necessarily job-related.

41. The successful completion of a nonformal educational programme and/or a nonformal qualification does not normally give access to a higher level of education unless it is appropriately validated in the formal education system and recognized by the relevant national or sub-national educational authorities (or equivalent).

Based on this definition, the key elements of non-formal education are as follows: it is institutionalised, intentional and planned by an education provider (similar to formal education); its defining characteristic is that it is an addition, alternative and/or a complement to formal education within the process of the lifelong learning of individuals (unlike informal, incidental or random learning); it does not necessarily apply a continuous pathway structure and usually leads to qualifications not recognised as equivalent to formal qualifications by a relevant national authority (unlike formal education); formal qualifications may be obtained through active participation in specific non-formal education programmes if validated in the formal education system (Microsoft Certification for example); and successful non-formal education completion does not typically give access to a higher level of education unless validated in the formal education system by a relevant national authority or equivalent.

Rogers (1996, 2004) approached non-formal education by linking it to a progressive framework that included informal learning, self-directed learning, non-formal education and formal education. Moreover, the progression from informal learning to formal learning becomes more organised, intentional and defined. Latchem (2012) further describes informal learning similarly to what ISCED (2011) defines as incidental or random learning (listening to the radio, watching television, family discussions, etc.). This type of learning occurs in the home, workplace or community setting outside the formal education classroom. Although ISCED (2011) differentiates informal learning from incidental or random learning, the boundaries are very blurred; it states that informal learning is intentional and deliberate, but not institutionalised like non-formal and formal learning.

Reviewing an earlier definition, Hallak (1990) suggested four categories of non-formal education:

- Para-formal education: Evening classes, distance education programmes, etc. that provide a substitute for formal schooling or offer a second chance to those unable to attend regular schooling.
- Popular education: Adult literacy, cooperative training, political mobilisation and/or community development programmes that are explicitly targeted to serve marginal groups.
- Personal improvement programmes: Cultural, language, sports and other programmes provided by clubs, associations and other organisations.
- Professional or vocational non-formal education and training provided by firms, trade unions, private agencies, etc.

Hallak's definition raises some interesting comparisons with the ISCED (2011) definition of non-formal education. Firstly, category one could in fact be credit-based programmes that lead to a formal education credential. Today, evening programmes and online degree programmes for adult learners would fall under his first category and would clearly be considered formal education programmes. Moreover, Hallak acknowledges distance education as an essential component of non-formal education programmes; there is no mention of open and distance education in the ISCED (2011) definition relevant to non-formal education. Hallak's categories two and three, however, align within the general parameters of the ISCED definition of non-formal education. Finally, category four, pertaining to professional or vocational non-formal education, could lead to a formal equivalency if validated against a national qualifications framework by a national education authority.

The application of information and communication technologies (ICTs) to ODL can play a vital delivery role in non-formal education. Relative to OER use in non-formal education, these technologies provide the vehicle for access in making OERs openly and universally available. The author suggests that ODL is an integral component of the definition of non-formal education delivery and access to content, including OERs.

Definition of non-formal education for the purposes of this article

The use of OERs for non-formal education will be defined in this article as:

- Institutionalised, intentional and planned by an authorised public or private education provider.
- Accessible in face-to-face, blended, and open and online delivery formats, as well as networked learning, social media and virtual learning communities, and utilising a range of audio, video and online digital media.
- Applicable to all ages to support basic life skills training (literacy, nutrition, health and safety, HIV/Aids education, disease prevention and other related work, social or cultural skills, but not necessarily applicable to a continuous pathway structure.
- Not supporting formal, credit-earning instruction or credentials in schools, colleges and universities, unless they are validated within the formal education system by a national education authority or equivalent.

Section II: OERs

Defining OERs

UNESCO and the Commonwealth of Learning (2011) define OERs as follows:

Open Educational Resources (OER): OER are teaching, learning and research materials in any medium that reside in the public domain and have been released under an open license that permits access, use, repurposing, reuse and redistribution by others with no or limited restrictions (Atkins, Brown & Hammond, 2007). The use of open technical standards improves access and reuse potential. OER can include full courses/programmes, course materials, modules, student guides, teaching notes, textbooks, research articles, videos, assessment tools and instruments, interactive materials such as simulations, role plays, databases, software, apps (including mobile apps) and any other educationally useful materials. The term 'OER' is not synonymous with online learning, eLearning or mobile learning. Many OER — while shareable in a digital format — are also printable.

Advantages and Limitations of OERs

- The above definition is included to give the reader a brief frame of reference. The advantages and limitations of OERs have been cited by many authors. Kanwar et al. (2010) highlighted

typically cited advantages of OERs, particularly for education systems in developing countries.

These included:

- Helping developing countries save course content development time and money.
- Facilitating the sharing of knowledge.
- Addressing the digital divide by providing capacity-building resources for educators.
- Helping to preserve and disseminate indigenous knowledge.
- Improving educational quality at all levels.

At a practical level, OER advocates cite that OER can be reused, mixed, altered and localised for cultural and social contexts; one does not need permission to use them; there is no digital rights management or restrictive licensing; and one can copy, paste, annotate, highlight and print them out basically free of charge (Butcher et al., 2011; Kanwar et al., 2010; McGreal, 2012).

Common barriers cited include the lack of awareness about OERs; the university elitism of “it was invented here so we’ll use our own”; faculty resistance given “my content is king in my kingdom”; and, of course, the lobbying of many publishers who see the OER movement as a threat to their historical business monopoly over content. Content is big business in the commercial world and those models will die hard (McGreal, 2012).

From a practical-applied perspective (Butcher et al., 2011), OERs provide teachers and students with:

- Access to global content that can be adapted and localised by teachers and faculty anywhere, anytime to create new courses, modules or lessons, or enhance existing content.
- More resources and choices for students to supplement their studies with value-added content.
- Opportunities to create diverse student and faculty learning communities that can bridge cultural, gender and ethnic differences to promote social inclusion in classrooms, in communities and in the world. OERs are effective localised cultural-social-ethnic manifestations of the global village.

In short, OERs will increasingly be used for non-formal educational purposes. Moreover, ICTs and ODL systems provide the highway for easy, universal access to OERs. This includes access by educators in developing and developed countries where such resources will be essential for planning and offering non-formal education programmes.

Section III: A Framework for OER Use in Formal and Non-formal Education

The uses of OERs are diverse and varied in higher education. They are also amenable to delivery via traditional face-to-face instruction, blended and ODL delivery modes. If their use is analysed along the formal and non-formal education continuum based upon a content level, OER use may be conceptually categorised as follows:

- Formal 1: Combining multiple OERs together to create major content units that allow students to earn academic credit and potentially apply these towards a university degree. For example, this is an option being developed by the OER university (OERu).

The OERu has initiated a pilot project through its OER Tertiary Education Network universities to create and offer eight first and second year university courses with an option to earn academic credit that could count towards a bachelor's degree in Liberal Studies. This project is in the early stages but reflects an innovative approach to creating value-added options for students (<http://creativecommons.org/weblog/entry/31947>).

- Formal 2: Combining a range of OERs in a focus area of a specialised discipline to earn academic credit towards a formal university certificate. The ability to combine OERs is one of their unique design features. McGreal (2012) states:

The concept of granularity is also important. An OER can be a course, unit, lesson, image, Web page, exercise, multimedia clip, etc. but it should have a specified pedagogical purpose/context [15]. Content instances can be assembled into a lesson. Lessons can be assembled into modules. Modules can be assembled into courses, and courses can even be assembled together and become a full programme. All of these at their various levels of granularity can be OER. (p. 2)

- Formal 3: Utilising selected OERs as supplemental resources to formal university instruction – making these OERs a formal part of an academic course that may form part of the grading rubric of the course. This is a very common use of OERs by university lecturers and primary and secondary school teachers.

This is the demarcation area between the use of OERs in formal and non-formal education. It is arbitrary and only presented as a guide for conceptualising the formal and non-formal educational uses of OERs. Let's look at some uses of OERs in non-formal education.

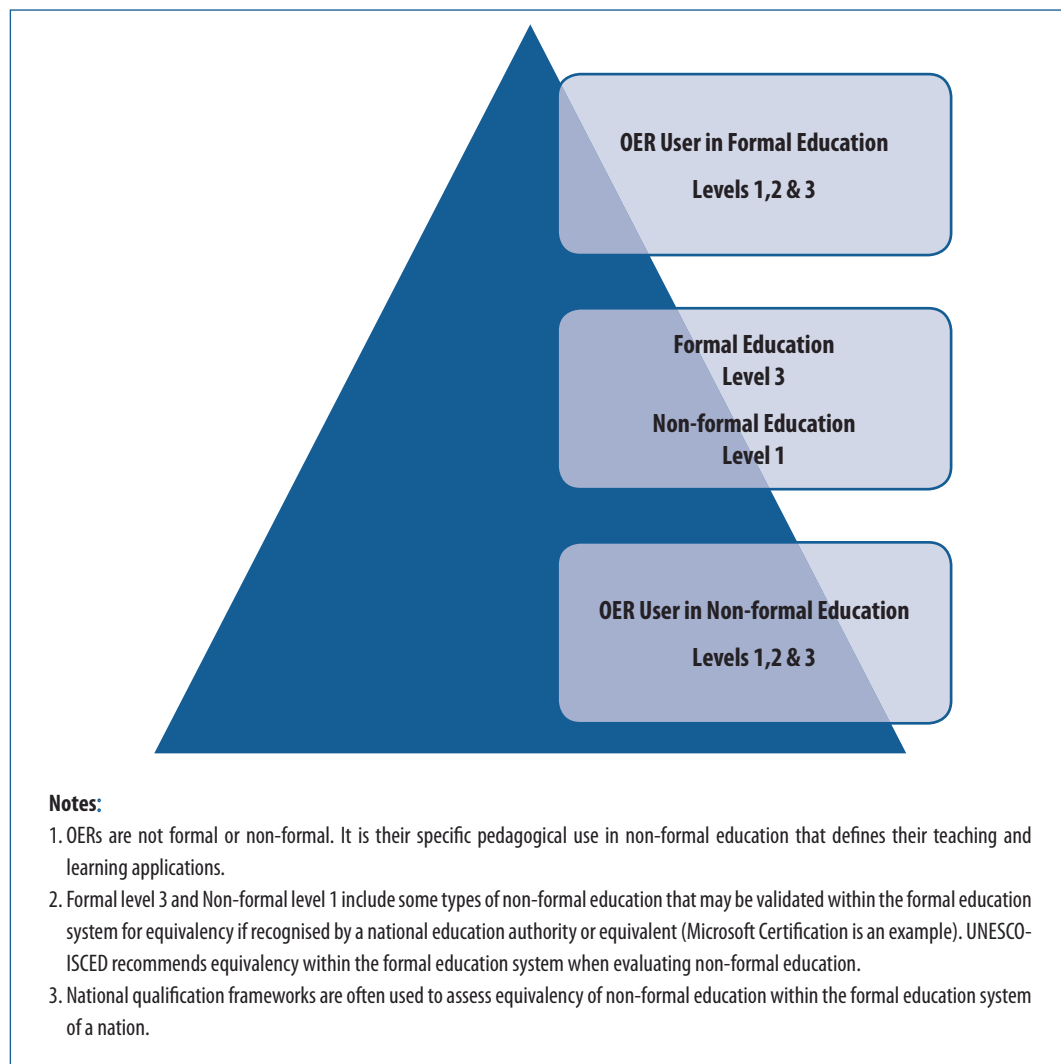
- Non-formal 1: Combining, packaging and integrating OERs in a focus area of a specialised discipline to earn a non-academic credit certificate of mastery or completion. In this scenario, OER use would be in the 'grey area' of the formal–non-formal education continuum; however, it is moving towards content applications that support non-formal education. The TESSA teacher education project in Sub-Saharan Africa is a good example of where formal and non-formal definitions are blurred and converge. TESSA produces OER teacher education materials for direct use by teachers and school administrators. These curriculum OERs have very specific elements that are found in formal education and some are organised as formal lessons with formal learning design principles and outcomes assessment.
- Non-formal 2: Using a set of OERs to provide basic writing skills to adults that did not complete secondary education. This would be a non-formal educational use of OERs; however, the actual instructional design (goals, objectives, assessment metrics, etc.) would mirror that of a formal academic course, the only difference being that it is a non-formal education environment for learning.
- Non-formal 3: Using a set of OERs to provide awareness education about nutrition, personal hygiene, HIV/Aids education and other basic skills. OERs may simply be used to raise awareness

of these topics for a specific population. The purpose is not organised in a formal, systematic sense. In a way, it is basic information sharing.

These levels of OER use along the formal and non-formal education continuum are not all-inclusive or definitive. The aim is simply to give the reader a guide to thinking about OER applications in formal and non-formal education. Moreover, it has already been illustrated (Shackleton Expeditions OER) that a non-formal use of OERs could in fact be organised in a very systematic way that mirrors what a formal university course for academic credit with clear goals, objectives, assignments, grading rubrics and grading looks like.

Indeed, this is not to suggest that formal and non-formal OER use can be categorised simply by whether or not one receives academic credit or formal recognition for learning. Rather, it accentuates that non-formal education programmes can often be validated against a qualifications framework for equivalency within the formal education system by a recognised national education authority. This

Figure 1. OER Use in Formal and Non-formal Education



is consistent with the ISCED definition of non-formal education, particularly regarding non-formal equivalency in the formal education system.

Figure 1 provides a summary of the uses of OERs in formal and non-formal education. The figure reflects a hierarchical relationship giving a higher status to formal education over non-formal education. This is typically the way most professionals think of the education continuum. However, this does not mean that the impact or goals of non-formal education, in any context, are any less valuable than formal university instruction.

Limitations of the OER Use Framework

The first limitation is that the framework arbitrarily ascribes a hierarchical level of application for OER uses in formal and non-formal education based on the content category of the level (credit-based degrees, certificates to non-formal certificates and skills training). This is an obvious bias given how most educators think about the hierarchical structure of education. The framework moves from higher application formal use of OERs to a diminishing non-formal level use. This is problematic because OERs come in diverse content packages and their use should be dictated by the specific learning objectives and outcomes in the teaching and learning process whether for non-formal education or formal education. Notwithstanding this limitation, the framework does give the reader a resource to think about how to conceptualise OER uses in formal education and non-formal education contexts.

Secondly, the ISCED definition states "The defining characteristic of non-formal education is that it is an addition, alternative and/or a complement to formal education within the process of the lifelong learning of individuals" (UNESCO, 2011, p. 8). Is AIDS education in Africa necessarily an addition, alternative and/or complement to formal education and lifelong learning? Is non-formal education in nutrition and health? The defining characteristic of these non-formal education programmes may be the contribution to the health, welfare and safety of African children with no linkage to the formal education systems, credentials and recognised education authorities of the respective country. The proposed framework was not based on this defining characteristic of non-formal according to the ISCED definition. This divergence clearly complicates the demarcation between formal and non-formal education and the use of OERs in both.

Thirdly, and most importantly, does the framework provide the reader with a useful reference for thinking about their teaching and learning approaches to non-formal education? Does it provide a context for using OERs in non-formal education? OER integration into non-formal education programmes is in its infancy and the answers to these questions are not for the author to answer. They are for the readers to answer, and hopefully contribute to, by expanding and refining the framework for using OERs in non-formal education.

Evaluating the Use of OERs in Non-formal Education

The evaluation rubric and process for assessing OER use in non-formal education may be comprised of four primary assessment metrics. These are: 1) purpose and outcomes of instruction; 2) design

of instruction; 3) context and culture of instruction; and 4) evaluation of instruction (Knowledge Advisors, 2010; Latchem, 2012; Mattox, 2012; Olcott, 2012).

1. What are the purpose, goals and objectives of instruction? Whether supporting a formal university course or a non-formal literacy workshop in rural Kenya, this is the first consideration and teaching goal.
2. The design phase depends on the types of learning goals to be achieved, the content, the competency levels set for students to master, delivery type (face-to-face, blended and/or ODL), and the assessment criteria used in the grading and/or evaluation rubric. A critical factor in the design process is how long does the non-formal educational activity take? Will it be a one-day workshop, a four-month course that meets three times per week, or a two-day seminar on literacy training?
3. The context and culture refers to key drivers of the non-formal educational activity-instruction. Why is it occurring? Who has mandated or recommended that a specific audience/population engage in this learning activity? Where will the non-formal education take place? What language will be used for instruction? What social and cultural norms of the population must be considered in the design principles? Are there gender issues that should be considered? If the non-formal education is delivered via technology, do the participants have the requisite skills to engage in the learning activity using technology (computer, video-based, etc.)? Is technology access available to all students? Will there be on-site facilitators to assist with instruction?
4. How will the non-formal education instructional activity be evaluated? What grading or performance rubrics will be used? Will evaluation measure individual competencies of specific skills and a composite assessment of all competencies set by the activity?

Indeed, these components are common for evaluating any educational activity, formal or non-formal. Moreover, the sophistication of non-formal education is important given many individuals desire to use these learning experiences as part of their non-formal education portfolio for entering formal education systems (vocational-technical institutes, colleges and universities, etc.).

Section IV: Future Research and University Leadership

Emerging Issues for Research

The acceleration of non-formal education across the globe raises many questions for the future of OER use. Some key questions that may emerge in the next two to five years pertaining to OER uses in non-formal education include:

- How can OER uses be expanded for non-formal education in developing countries, particularly regions like Sub-Saharan Africa and parts of Asia where economic realities and the digital divide are barriers to technology access, education and qualified teachers? (Kanwar, Kodhandaraman & Umar, 2010).

- Major initiatives such as TESSA (2012) and OER Africa (2012) have made invaluable contributions to education and open resources in Africa. How can we learn from these successes to expand access and use of OERs for non-formal education?
- Non-formal educational uses of OER, whilst considerably less expensive than formal education, still requires resources for staff, delivery and curricular development. What potential business models are needed to expand non-formal uses of OERs? (De Langen & Bitter-Rijkema, 2012; Olcott, 2012).
- How do we categorise OERs for use in non-formal education in organisational OER repositories? Are all OERs equally applicable for use in formal and non-formal education?
- What are the challenges for OER use in non-formal education delivered in blended and ODL formats?

OER development and use is likely to increase in formal and non-formal education in the next five years (Butcher et al., 2011; Latchem, 2011; Olcott, 2012). These resources are 'value-added' supplements for supporting non-formal education. Educators at all levels need to consider integrating these resources into their teaching and learning activities. Universities, especially those with a developed ODL capacity, will be strategically positioned to foster the use of OERs in non-formal education contexts.

Leadership Opportunities for Universities

- The following summarises some key aspects for university leaders to consider:
- What is the broader scope of the university's role and mission for the delivery of training and non-formal education? Is the university offering these types of institutional outreach via ODL?
- Is the institution promoting and using OERs as supplemental resources for formal academic courses and programmes? How can these uses be integrated into the non-formal education enterprise of the university?
- How can universities mobilise their OER inventory to align with non-formal educational uses and provide access to these for use in developing countries?
- How do institutions build common standards for OER use in non-formal education? Will common quality standards be necessary for benchmarking the global categorisation of OERs used in non-formal education?

Summary

This article examined the growing potential of using OERs in non-formal education programmes. OERs are not formal or non-formal resources. It is how OERs are used in formal and non-formal education programmes and settings that define their context and application for teaching and learning.

The definition of non-formal education generates considerable debate across the profession. The author discussed the challenges of defining non-formal education given the range of related terms such as informal education, adult education, self-directed learning, incidental and random learning, and others. The ISCED definitions of formal and non-formal education were presented to provide the reader with comprehensive definitions and to form the basis for how non-formal education was defined in this article.

A framework for using OERs in formal and non-formal education was presented to provide the reader with a conceptual reference for thinking about his/her approach to teaching and learning, and to integrating OERs into non-formal education programmes. The limitations of the framework were highlighted and the author concluded with a summary of potential topics for future research and leadership opportunities for universities in delivering non-formal education.

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Appendix A

Recommended OER resources:

Knowledge Cloud	www.oerknowledgecloud.com
Commonwealth of Learning (COL)	www.col.org
Connexions	www.cnx.org
Creative Commons	www.creativecommons.org
Harvard/MIT edX	www.edx.org
OER Africa	www.oerafrica.org
OER ASIA	www.oerasia.org
Open Courseware Consortium	www.ocwconsortium.org
TESSA (Teacher Education in Sub Saharan Africa)	www.tessafrica.net
OpenLearn	www.open.edu/openlearn
UNESCO	www.unesco.org

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