CO-AUTHORSHIP IN THE AGE OF CYBERCULTURE:
open educational resources
at the open university of the united kingdom

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INTRODUCTION

Cyberculture is a central cultural and social development of the networked society of the Information Age. Supported on the notion of a fundamental reciprocity in human communication, cyberculture advocates that creative conversations can and should take place openly to support a more participatory and just society (LEVY, 2011; NAYAR, 2010). Cyberculture supports the coming-together of societies in a universe devoid of central control, cyberspace, which is supported on the Internet and allows diverse communities to coexist, develop and share thinking on a global scale, whilst enabling discussion and knowledge creation locally. Dialogue and co-creation of knowledge, thus, lie at the heart of cyberculture.

Open Educational Resources (OER) are in synchrony with the affordances of cyberspace. Originally coined to describe learning resources shared openly via the Internet (UNESCO, 2002), the expression OER has come to describe not only resources specifically developed for learning purposes, shared on the Web under open licenses, but a movement that now counts with advocates and collaborators across the globe, including educators, learners and institutions. In little over a decade since its inception, the movement has spawned a number of initiatives around the world, all of them committed to the democratising ideals of opening up access to knowledge and its construction, consistently with the possibilities of cyberspace and the principles of cyberculture. OER initiatives are underway that span all educational sectors, from primary schooling to Higher Education (HE), all areas of knowledge, creating a growing multilingual base outside the English speaking countries that have provided a lead to the movement in its first decade (OLCOS, 2007). Indeed, Open Educational Resources (OER) can be viewed as a phenomenon of cyberculture and its social constructionist perspective on knowledge creation.

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This paper discusses the possibilities of knowledge creation through co-authorship that are entailed in OER initiatives of different natures and settings within a large organisation. The paper examines a selection of OER-related projects and activities carried out at the Open University of the United Kingdom (UKOU), the largest distance education institution in Europe and one of the biggest and most respected in the world. The paper adopts a perspective provided by a comparative framework proposed by Okada (2010), which identifies key features and differences between 'Closed' and 'Open' Education, that is, generally, formal education, which takes place within the constraints of institutional Virtual Learning Environments (VLE), and the types of informal education that are gradually taking place more widely in cyberspace. The next section provides a brief presentation of the comparative framework adopted, which highlights co-authorship through colearning. The UKOU as an institution, its structure and methods are then introduced and various projects are presented and discussed. The article concludes by proposing a brief commentary on the creative potential that is being unleashed at the very boundaries between formal and informal educational spaces that cyberculture is challenging.

CO-AUTHORSHIP THROUGH COLEARNING

The term colearning was originally proposed in 1996 by Frank Smith in the book *Joining the Literacy Club*. The concept was used to emphasize the importance of changing the role of, respectively, teachers and students from dispensers and receptacles of knowledge to both colearners – collaborative partners on the process of sensemaking, understanding and creating knowledge together. A decade later, Brantmeier (2005) explains that colearning contributes toward student-centered learning as well as a more genuine 'community of practice' through dynamic and participatory engagement for the collective construction of knowledge. The concept has recently become more popular due to the rapid advances of Web 2.0, which allows the creation and exchange of user-generated content, information sharing, interoperability, user-centred design and social networking. In an environment of openness, the process of colearning is enriched through wider participation in creating, adapting and reusing OER (OKADA, 2012). Additionally, with the rapid uptake of social media by users and the wider dissemination and development of social networks, several features and differences can be identified between traditional e-learning in Virtual Learning Environments (VLE) and colearning through OER and open spaces. Table 1 below summarises key differences and features of these different learning situations.

Table 1. CoLearning through OER and Open Environments (OKADA, 2011)

	Co-authorship through Traditional e-Learning environments ('Closed Education')	Co-authorship through coLearning & OER in open environments ('Open Education')
Community	Specific, structured, and predefined roles	Diverse, flexible and collaborative roles
Educators	Knowledge source	Collaborative mentors, learning coaches, competence and knowledge facilitators.
Students	e-learners Reflective peers	coLearners, collaborative participants, co-authors, peer reviewers, social learning managers
Co-authorship	Experts in the field	Diverse authors and co-authors: professionals, researchers, educators and coLearners
Learning content	Specific format, no editable, low granularity	Diverse open formats, hybrid, editable and reusable high and low granularity
Content Production	Sequential: Planning – Development –Review - Publishing – Deliver	Flow: collaborative planning, collective creation, open publishing, wide dissemination, peer-review, reuse and adaptations , continuous improvements
Quality / Credibility	Institutional	Collective feedback, shared comments, social tracks and learning paths
Sources	Learning packages	Interoperable repositories
Copyright	Copyrights reserved	Open licenses (e.g. Creative Commons)
Upgrade	Little update	Frequent update, continuous improvements
Learning tools	Webpages, discussion forum, forms-portfolios and quizzes	Social Networks, Web and micro blogs, Wikis, RSS feeders, PLE, webinars, social calendars, collaborative and collective task managers

The table indicates the enormous potential of colearning, where colearners play significant roles: co-authoring OER, sharing collective feedback and reviews, co-orchestrating their learning production and process as well as disseminating collaborative learning paths. There are, however, several challenges in implementing and facilitating colearning. Several studies highlight some significant barriers in co-authoring OER, for example, particularly OER to be reused (PETRIDES *et al.*, 2008; OKADA AND CONNOLLY, 2008). The majority of best practices with OER in Higher Education (HE), in fact, show more evidence about "first use" quality aspects rather than specifically presenting evidence of "re-use"(GLENNIE *et al.*, 2012).

More recent research has generated recommendations for extending effective reuse (OKADA, 2011) and identified significant issues to be overcome, particularly the lack of a culture of reuse, which includes social, technical, pedagogical and legal aspects. Diverse aspects that appear to contribute to the low level of OER reuse include:

• the lack of interest for reusing and developing OER;

• the need for efficient tools to facilitate and simplify reusability;

• the low communication among different stakeholders;

• the importance of social collaboration for discoverability and credibility around the content;

• Many barriers were also indicated, including:

• understanding and meeting learners needs catching up the rapid advances of technology;

• implementing appropriate legal aspects;

• disseminating clear issues with respect to copyright;

• designing reusable resources by taking into consideration requirements of very different natures (technological, pedagogical and cultural).

Reusability is a key issue in the area of OER, indeed, a clear necessity that requires further awareness-raising, since, when educators and learners are aware of its role, they can design OER with reusability in mind, that is, they can design Reusable Learning Content (RLC). RLC is understood as:

> open educational content designed to be reused, therefore, reproducible, addressable and flexible to be adapted multiple times in multiple ways, in multiple purposes, in multiple formats and in multiple contexts by multiple users. RLC can, therefore, refer to '"content of learning", "learning objects", "teaching materials", "rich media content", "interactive components" and "open educational resources". (OKADA, 2010).

Reusability is, therefore, an essential feature for OER designers to bear in mind when creating content that is easy and flexible to adopt and/or adapt. From this perspective, reusability can be viewed as a multi-levelled feature of OER that enables their adoption or adaptation. Adopting means selecting the material or part of the material as it is. Adopting involves finding, accessing and making a resource available to be used. Adapting refers to small or significant changes. Thus, the ways of reusing OER can take numerous forms, depending on the level of reusability of the OER, as shown in Figure 1 below (OKADA, 2010).

Coauthorship	Levels of reusability	Ways of reusing OER
high	Recreate content & contribute to new productions	**Re-authoring:** Transforming the content by adding your own interpretation, reflection, practice or knowledge.
		Contextualizing: Changing content or adding new information in order to assign meaning, make sense through examples and scenarios.
		Redesigning: Converting a content from one form to another, presenting it into a different delivery format.
medium	Adapt part of the content	**Summarising:** Reducing the content by selecting the essential ideas.
		Repurposing: Reusing for a different purpose or alter to make more suited for a different learning objectives.
		Versioning: Implementing specific changes to update the resource or adapt it for different scenario.
		Translating: Restating Content From One Language Into Another Language.

		Personalising: Aggregating tools to match individual progress and performance.
none	Adopt same content (whole, part or combination)	Resequencing: Changing the order or sequence.
		Decomposing: Separating content in different sections, break out content down into parts.
		Remixing: Connecting the content with new media, interactive interfaces or different components.
		Assembling: Integrating the content with other content in order to develop a module or new unit.

Figure 1: Levels of reusability and their corresponding possibilities of reuse (OKADA, 2010)

The higher the level of reusability provided by the resource, the higher is the level of co-authorship possible. For instance, when participants only assembled content, or decomposed it, the level of authorship is much lower than contextualising or re-authoring resources.

OER AT THE UKOU

About the UKOU: context

With a student cohort of over 250,000 undergraduates, teaching at the UKOU is a team effort that consists of two major inter-related stages referred to as module development and module presentation. Module development is carried out centrally by interdisciplinary Module Teams (MTs) led by academic subject experts. Module development is, indeed, characterised by a form of co-authorship: whilst each resource that integrates a course has a lead academic author, a specialist in the topic or topics addressed, all materials are critically reviewed and discussed by the complete team in repeated cycles of drafting, reading, discussing and re-drafting. Indeed, the usual process involves 3 of such cycles, which leads to the preparation of a "handover" version that is, then, passed on to an academic editor, who prepares the final text in conversation with the lead author. During module presentation students are supported by part-time ALs, who offer tailor-made advice to small groups of learners (typically 15-25, at maximum). Students receive further support from the central MT online forums that use the university's Moodle-based VLE.

Learning resources include a combination of materials on multiple media, in addition to a gradually heavier use of the VLE and its many features, which are brought together into modules ranging from 10 to 60 credit points (one credit point is equivalent to 10 study hours). The combination of learning resources with the support provided by ALs is known as the Supported Open Learning (SOL) model (JOHNSON, 2003, pp. 36-45). Within this structure, the roles of MTs and ALs differ significantly, but the split of functions between these two groups of teachers within the broader student-support network entailed in the SOL model has been pivotal to the logistics required for the development and presentation of modules to substantial numbers of students.

The lifecycle of an UKOU module varies according to its subject area, although, typically, a module will be extensively reviewed within 3 or 4 years of its launch, potentially triggering more

significant updates or changes in addition to the normal maintenance activities that take place continuously as module presentation tasks. The typical lifespan of a module raises specific challenges to module developers in rapidly developing technology-related areas, and the emergence of open content and, more specifically, OER is slowly beginning to alter this scenario, partially because the notion of "openness" poses many practical as well as ideological challenges to large-scale education and its underlying mass-production structure (WILEY; HILTON III, 2009).

In a history that now spans over forty years, the UKOU has developed a sizeable archive of learning resources, and given the changes in the funding system of UK HE, issues related to the logistics of reuse have taken centre-stage in an institution where module development costs are quite significant. A relatively early initiative addressing aspects of reuse was run between 1999 and 2003, the CURVE project. The project investigated the (then) current reuse practices across the university, examining logistical and pedagogic issues that arise in connections with these practices and creating recommendations for further exploration and practice, which have been (and remain) openly available to the public.

Whilst the CURVE project focused on practices already carried out within the institution, even if loosely and tacitly, the Open Source Teaching Project (HIRST, 2001), OSTP, the first OER-related initiative involving the university, was developed as a concerted effort of a few individuals within a wider, yet equally small, cross-institutional group of collaborators interested in the broader culture of openness emerging with the expansion of the Web. Although the acronym OER had not yet been coined during the lifetime of this project, this explored a closely related notion: Open Source Education, a "move towards making educational materials freely available to all". Indeed, drawing strongly upon the Open Source Software model, the project presciently tackled a number of concerns that are consistent with those of the, then incipient, OER movement, including licensing, co-authorship, technical infrastructure and sustainability, the latter in terms of workable business models for institutions aiming at supporting open and free sharing of resources. In many ways, the work carried out in this project was seminal and visionary, as it anticipated the current questioning towards quality, motivation for participation and, crucially, the integration of communication and content management within an interoperable model for an envisioned project platform. The possibilities of co-authorship, indeed, stood at the core of the project's agenda, and the infrastructure proposed aimed at providing an 'online, collaborative working environment' for authors quite a while before Web 2.0 notions started appearing and being disseminated more widely.

Although neither directly spawned by the OSTP nor involving the same group of open content advocates within the university academic staff, a variety of OER-related projects have been conducted at the institution since that project was completed, and the remainder of this article explores a selection of these initiatives. In particular, we focus on co-authorship–related aspects, which are examined in a series of short studies that showcase the institution's involvement with OER and the OER movement. The case studies are organised using Weller's (2012) framework that categorises OER as "big" or "small", that is, resources that arise from large institutional projects and those individually produced, respectively.

We remark that Weller spouses a slightly different view of OER than the one shared within the OER movement as such. As suggested above, the OER movement is specific in respect to a kind of double intentionality, that is, both in terms of purposes (OER are resources produced specifically for teaching and learning) and in terms of sharing (OER are resources explicitly shared under open licenses), a specificity that Weller's view, broader in that it signals the potential of any Web-shared resource to serve as a teaching and learning resource, does not admit. Nevertheless, we believe the framework provides a helpful structure to organise the examples provided, as it allows us to highlight differences between the initiatives that arise from their different types of commitments, constraints and locations within the host institution.

Finally, we would like to stress that the examples discussed below have been chosen to illustrate OER involvement within and by the institution, but, as a whole, the selection is by no means meant to be exhaustive. We aim simply to illustrate that the institution´s participation in the movement is varied and takes different forms, each posing differentiated possibilities for collaboration, co-authorship and colearning[1].

BIG OER AT THE UKOU

The UKOU has, as an institution, supported a number of OER projects that have received significant external funding, in particular, from the William and Flora Hewlett Foundation, which is arguably the major benefactor of the OER movement. Other funders have included the EU Commission, the UK Joint Information Systems Committee (JISC), the Higher Education Funding Council for England (HEFCE) and the UK National Lottery. In each of the cases examined in this category, OER development has been (or is, in the case of on-going projects) part of a large research and development, externally funded project. Each of these projects has had varied impact

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[1] See the UKOU *Open Educational Resources at the Open University* site for an up-to-date list of OER projects across the institution.

on the institution´s main teaching and learning activities, since, as a large provider of distance education, the institution is tightly structured and managed, which facilitates some types of innovation more easily than others. However, these projects do place the university and some of its members firmly as major players in the OER movement, not only through the many partnerships and research collaborations entailed, but also through the astounding expertise and innovation shared and created through these partnerships. The examples are discussed in some detail in the text below, and their main features related to co-authorship and potential for colearning are summarised in Table 2, at the end of this section.

OPENLEARN

OpenLearn has been, undoubtedly, the most significant OER initiative within the UKOU so far, as it constituted both a globally pioneering initiative and a seminal development within the institution. Run initially as a massive institutional project funded by the Hewlett Foundation (2006-2008), OpenLearn has now become a larger learning resources hub and orientation site for the institution´s Web presence, which integrates not only the sites developed in the original project (LearningSpace and LabSpace), but also a wealth of the UKOU-produced resources, including the content of the now decommissioned open2.net site, a companion site maintained for nearly a decade to support the educational work carried out collaboratively by the UKOU and the BBC through a wealth of co-produced radio and TV programs.

In addition, the current OpenLearn also includes links to the UKOU channels on various social networks and media-sharing sites (e.g. YouTube) and, notably, the institution´s contribution to the iTunes University, a branch of Apple´s iTunes Store that offers free educational resources to new audiences. The university joined iTunes U in 2008, making available a range of high quality audio-visual, freely-downloadable (through Apple's iTunes application) assets, which are organised into collections that reflect the diversity and strength of the University's curriculum, thus contributing to establishing its academic brand globally as well as promoting the research carried out within the institution. The OU at the iTunes U holds 392 collections containing 3,103 tracks and 422 eBooks representing over 5,000 hours of study, and has 52 free courses on the iTunes app. The initiative has proved an astounding success with over 50.7 million downloads by c. 6.1 million unique visitors, as well as over one million subscriptions via iTunes, with 70% of visitors now downloading straight to mobile devices (LANE; LAW, 2012). However, due the complexity of the Rights issues involved in audio-visual materials, the reuse possibilities of this material are legally limited.

Originally, however, OpenLearn constituted an ambitious project, thus presented by McAndrew et. at (2008):

> The Open University has a large catalogue of high quality learning materials in a variety of formats. Through OpenLearn some of those educational resources are made freely available in a web-based environment under the Attribution Noncommercial Share Alike Creative Commons Licence. The OU set out to:
>
> • add value to OER delivery by deploying leading edge learning management tools for learner support;
>
> • encourage the creation of non-formal collaborative learning communities;
>
> • enhance international research-based knowledge about modern pedagogies for higher education.

The project built originally two Web "sister" sites, the LearningSpace, where it shared 5000 study-hours of its current course materials, repurposed from their original media (including, in many cases, print) for presentation on the Web and shared in a variety of reusable formats, and the LabSpace, an experimental site that aimed at supporting different forms of collaboration and co-authoring. Both sites, still up-to-date and available, are based on the Moodle software, consistently with the institutional VLE, and incorporate a variety of tools to support communication (e.g. FM, a Web 2.0 videoconferencing tool developed at the university´s Knowledge Media Institute, KMI) and sensemaking (e.g. Compendium, a tool for mapping ideas, arguments and information, also developed at KMI). Learning resources shared (and constructed) in these sites are organised as "units" categories into knowledge areas (e.g. "Computing and ICT", "Arts and Humanities", "Health and Social Care") and containing numerous of multimedia elements, including excerpts of video productions. All of the material is shared under a Creative Commons license, except for some third-party materials, which had their rights cleared for use exclusively on the site and, thus, cannot be legally re-purposed.

In addition to the development of the sites, supported by a sizeable resource production operation that has now been integrated into the main development structures of the institution, the project has generated a multiplicity of research outputs (see OpenLearn Workspace at the Knowledge Network site) using a variety of novel approaches. The research carried out on the project has tackled different aspects of the initiative, including its institutional impact from a micro (FERREIRA; HEAP, 2006; FERREIRA, 2008; FERREIRA, 2009), macro perspective related with sustainability (LANE, 2008), OER production processes (CONNOLLY *et al.*, 2007), use of sensemaking and communication tools (OKADA *et al.*, 2009, OKADA *et al.*, 2011, OKADA *et al.*,

2012) that can be used for co-authorship, the integration of OER with the main business of the university (LANE, 2012) as well as a the very challenges entailed in researching open online learning (MCANDREWS; WATTS, 2007). Crucially, the project has spawned a number of other collaborative ventures and projects, remaining a reference in the OER movement for the quality of its resources.

TESSA

The Teacher Education in Sub-Saharan Africa (TESSA) project operates as a network of African institutions involved in OER development, reuse and research with focus on teacher training and support. TESSA is supported by the UKOU and a number of other international partners, but, as Wolfenden (2008) suggests as one of five specificities of the project, "the user, the teacher educator, is at the centre". Hence, the project counts on the support of experienced partners, but the majority of its OER growing collection has been created by teacher educators from across Africa, which allows them to tackle in a unique way issues of localisation (that is, recontextualisation of OER shared internationally; c.f. OECD, 2007; ATKINS *et al*., 2007).

The project is an example of how an international collaboration can successfully build a knowledge base that is rich, varied and locally-appropriate, as it takes into account environmental aspects (physical, political and technological), curriculum, language, learner characteristics, cultural heritage and cultural beliefs (WOLFENDEN, 2012) and, thus, encourages community-building and co-authorship. TESSA OER are created collaboratively by local academics. The adaptation of resources produced elsewhere follows a structured (and continuously reviewed and improved) process that uses templates and includes a clear quality assurance aspect directly linked with local knowledge and needs (WOLFENDEN *et al*., 2012). The TESSA project has, indeed, capitalised on a previous UKOU/BBC collaborative endeavour that created a Continuing Professional Development (CPD) online programme for UK teachers by experimenting with the use of templates in the production of its resources (BANKS, 2003).

OLNET

The Open Learning Network, OLnet, project, a partnership between the UKOU and Carnegie Mellon University, USA, was another OER-related initiative funded by the Hewlett Foundation from 2008 and recently completed. OLnet was established with the purpose of fostering a community for building and sharing knowledge on research into OER and its ramifications. The project supported the development of an international research hub for aggregating, sharing,

debating and improving Open Educational Resources (OERs) and the practices that are emerging around these resources. Upon its completion, the project delivered a Website sharing a wealth information about OER research and integrating a number of tools and resources to support open education.

OLnet operated with a core team based in each of the partner institutions, but also funded a number of visiting Fellowships for campus-based discussions, supporting considerable mobility of collaborators in addition to the online exchanges through its main Website and Cloudworks (please see below), a social networking project funded by JISC and focused on the exchange and construction of teaching and learning knowledge. In this way, OLnet has provided links with other ongoing projects (including, also, TESSA).

Cloudworks is an academic social networking site developed as part of a separate UKOU-based project (the Open University Learning Design Initiative, OULDI, recently completed), funded by JISC. As a Web-based platform, Cloudworks supports socialisation, co-authorship and sharing through a number of features that allow different forms of dialogue, debate and peer commenting. The platform has been actively exploited both as a site for practitioner debate (ALEVIZOU *et al*., 2012) and research into numerous aspects of the integration of digital technologies into educational contexts (e.g. CONOLE; CULVER, 2010, ALEVIZOU *et al*., 2010; CONOLE; ALEVIZOU, 2010).

In addition to these resources, OLnet built and developed an Evidence Hub, a collective intelligence tool to review evidence on use and reuse of OER, and, with the support of the UKOU´s KMI, Cohere, a visual tool to represent, organise and share knowledge. The Hub, in particular, remains open and invites anyone interested in OER research to contribute and use the available tools. It provides researchers and practitioners in Open Education with a dynamic and living map of the state-of-the-art as well as trends in the area. (DE LIDDO, 2012)

ICOPER

Driven by a consortium of key players in the European educational arena, ICOPER has provided access to a critical mass of more than 12,500 hours of integrated educational content. Based on a productive infrastructure, the project systematically analysed the implementation of existing specifications such as IMS RCDEO, IMS LD, SQI, and QTI. ICOPER's underlying educational framework guided a consensus-building approach to developing Best Practices, addressing issues such as: (1) exchange of competency models and learning outcomes; (2)

collaboration around learning designs; (3) integration of content via federated search and harvesting; (4) reuse of instructional models and content in learning deliver environments; (5) interoperability of item banks for assessment and evaluation.

ICOPER has created mechanisms to ensure European-wide user involvement, cooperation, and adoption of standards within a large community to support all phases of standardization. Liaison management will condense findings into an ICOPER Reference Model, which will be fed back to standards bodies and disseminated via the ICOPER Institute for Training & Consulting.

One of the key contributions of this project has been that, through its detailed analysis of the specifications and standards available and in use, it has created recommendations that address fundamental OER and co-authorship technical issues such as exchange of competency models and learning outcomes, collaboration around learning designs, integration of content via federated search and harvesting, reuse of instructional models and content in learning delivery environments and interoperability of item banks for assessment and evaluation. ICOPER also presents key issues that are related to extending effective reuse embodied in OER to support the reuse of learning content by providing an insight into the main challenges and benefits involved in the process of creating, remixing and repurposing what we are now designating as Reusable Learning Content (OKADA, 2011; CONNOLLY; SCOTT, 2009).

ISPOT

The iSpot project is part of the Open Air Laboratories (OPAL) network funded by the National Lottery to run a number of projects whose objectives are to inspire and support communities to explore, study, enjoy and protect their local environments through engagement with scientists. The project has built a large Website to support user-generated content to be co-authored and shared, exploring the idea of citizen science, that is, science that harnesses the efforts of volunteers who collect and/or process data as part of a scientific inquiry (SILVERTOWN, 2009).

The Website is designed to allow anyone, including casual viewers of wildlife, knowledgeable amateurs as well as researchers, to partake in communal scientific activities. Through a selection of tools that allow members to upload and share images, identify species and discuss their findings, the site encourages co-authoring communities to be built that include members with a range of wildlife-related interests and levels of expertise. At the time of writing, iSpot boasts over 18000 members engaged in activities that have the significant benefits of both

contributing to open education and helping scientists gain access to resources normally outside the scope of conventional research (MCANDREW *et al*., 2010).

OPENSCOUT

The OpenScout European project aims to investigate 'skill based scouting of open user-generated and community-improved content for management education and training'. As part of this project, the OPENSCOUT tool library has been implemented as a social network of people that (re)use and adapt OER (MIKROYANNIDIS *et al*., 2011a, 2011a). The OpenScout Tool Library aims at bringing together these people and enabling them to share their experiences and best practices in (re)using and adapting learning resources. In addition, it aims at supporting co-authorship of case studies and learning scenarios focused on different stages of the lifecycle of learning resources, including adaptation, collaboration and communication tools, in a perfect articulation with the OER principles of use, re-use and sharing content, including multilingual access.

In order to accommodate the sharing of stories and resources, the ELGG (social networking platform has been extended with plugins that enable new functionalities for users registering tools and scenarios with examples. There is the opportunity for participants to tag, comment, rate and recommend stories and resources throughout the tool library. Using these social metadata provides a rich method for filtering and identifying the most useful (e.g. highly recommended by peers) stories and resources for a user in a particular situation. For example, based on the format or license of a particular content a user has found, a suite of useful tools can be suggested. Users can also search for tools using the name, terms in the description, license or format.

The OpenScout Tool Library is being extensively used by COLEARN, a community of educators based in Brazil, Portugal, Spain and the UK, who originally gathered around OpenLearn's LabSpace. Differently from the possibilities available on the original site (a Moodle-based VLE), the Tool-Library (ELGG) offers COLEARN members a platform of which provides social networking functionalities, allowing members to manage their social contacts based on their interests and institutional research groups as well as expand their learning and social ties, in a public or private way (OKADA *et al*., 2012).

The COLEARN participants who started to use the Tool-Library are organised into 30 different academic groups of research into education, and a research project is being carried out that aims to investigate the group´s use of the Tool Library. Members are categorised into five teams:

postdoctoral researchers (45%), PhD students (10%), master students (30%), bachelors (11%) and undergraduates (4%).The study is applying two research approaches: participatory observation and Research 2.0. The first, participatory observation provides an empirical method for collecting and sharing interpreted data created and shared about the group through the user interactions within the OpenScout Tool Library. The second method, Research 2.0 (ULMANN *et al.*, 2010), is used to collect and analyse data generated from analytics services such as Google analytics from the OpenScout Tool Library, as well as YouTube analytics and data collected from the initial online survey.

In order to promote interaction and collaboration amongst participants, three core steps were collectively established and agreed by the COLEARN Community in the Tool Library:

1. To survey, describe and share personal and research group interests, in addition to academic background and technology skills, including experience with social networks;

2. Based on a categorisation of interests identified in the first step, to produce an open educational media artefact (an image, an audio-visual and a social network map) about the notion of openness in Education within the context of individuals' and groups' research themes; this also includes a collaborative reconstruction of the open video clip 'Shared Culture' (REF – add to references list) created originally by Creative Commons.

3. To develop an OER unit in groups, integrating the open educational media components created in step 2; this step also focuses on disseminating the OER production and OER tools through social media.

SCORE

The Support Centre for Open Educational Resources in Education, SCORE, is a three year project (2009-2012) funded by the Higher Education Funding Council for England, the governmental body responsible for educational funding in the country. The project aims to support individuals, projects, institutions and programmes in English Higher Education as they integrate OER in their practices. The project aims include the creation of a further 3600 study-hours' worth of learning resources co-authored collaboratively to be added to the existing OpenLearn collection. Some of these extra study hours have been generated by SCORE Teaching Fellows who chose to present the outcomes of their project in their LabSpace area of OpenLearn (CONNOLLY, 2012; CONNOLY; GAY, 2012). SCORE is also targeting the area of community building as well as research activities.

In particular, SCORE has assigned a portion of its funding to support a number Fellows (restricted to UK-based academics) in conducting smaller OER-related development and research projects. In addition to these goals, SCORE has provided a link between the UKOU and a number of other projects and institutions, including the OpenCourseWare Consortium, a worldwide association of HE institutions involved in OER development (CONNOLLY *et al*., 2012).

CO-AUTHORSHIP AND 'BIG OER' AT THE UKOU

As a summary of the discussion so far, we present a table (Table 2) that highlights the main co-authorship features and incentives identified in the various examples presented above. The table also includes, for ease of reference, the Web addresses of the main sites and platforms discussed.

Table 2: ´Big OER´at the UKOU

'BIG OER'	Incentives for co-authorship	Example
OpenLearn	Encouraging the creation of non-formal collaborative learning communities and the publication of their collaborative content	OpenLearn´s LabSpace is an area allowing creation and distribution of OER by registered users (registration is free). As an open area based on Moodle, many communities around world have been co-authoring content since the site was established.
TESSA	Collaborative creation and sharing of OERs and strategies to support the use of these OERs in school-based teacher development programmes in Africa	TESSA´s OER were created collaboratively by teams of academics from across Sub-Saharan Africa using a highly structured template. Study units are subjected to a rigorous quality assurance process and are available in a variety of interoperable formats.
OLnet - The Evidence Hub	OLnet tools aim to provide researchers and practitioners in Open Education with a dynamic and living map of the state-of-the-art as well as trends in the area; the Evidence Hub is open and invites anyone interested in OER research to contribute and use the available tools	The Evidence Hub has about 100 signed-up users, amongst whom there are well-known members of the OER community. In total 1,472 user-generated content elements have been added to the Evidence Hub. Cloudworks network remains active and open to contributions by a community of educators interested in sharing and creating knowledge on all aspects of teaching and learning.
ICOPER	Exchanging of competency models and learning outcomes, collaboration around learning designs, integration of content via federated search and harvesting, reuse of instructional models and content in learning delivery environments and interoperability of item banks for assessment and evaluation.	The ICOPER - OICS has harvested a critical mass of high-quality educational content through the OAI-PMH protocol. Content was collected from 19 providers totalling 83,824 resources and providing more than 20,000 documented hours of learning resources.
OpenScout	Bringing together people and enabling them to share their experiences and best practices in (re)using and adapting learning resources, case studies and learning scenarios, provided by different backgrounds and stages of the lifecycle of OER	Oer.kmi.open.ac.uk is one of the outcomes of OpenScout project – Tool Library. This open publication area houses several 'big' and 'little' OER created collaboratively: 84 images, 20 videos, 40 maps, 20 units, 1 open educational collection.
iSpot	Supporting colearning and coauthorship across the boundary between the informal and formal, using a combination of social networking, informal access to expertise, accredited learning opportunities. Anyone can upload a photograph of wildlife, other users can agree with the identification, attach a comment or review.	iSpot has built a nationwide community of tens of thousands of people who are helping each other to observe and learn more about the natural world around them. To date, the project has over 18,000 registered users who have submitted more than 85,000 observations of about 5,500 species.
SCORE	Extending OpenLearn collection, reflecting sector priorities in its selection of new material and support individuals, projects and institutions in publishing into LabSpace and dissemination across other collections and repositories.	SCORE has funded 36 fellowships to support project activities that inform and influence policy and practice around OER creation, sharing and use; lots of OER content are being added to OpenLearn;

'LITTLE OER' IN DEVELOPMENT: DIRECT ENGAGEMENT IN CYBERCULTURE

The discussion that follows examines examples that are quite different in nature from the projects already presented, but they illustrate that 'little' OER development at the UKOU has been integrated with the work of individuals engaged, predominantly, in action research carried out within UKOU modules. Funding, in these cases, is indirectly provided by the institution itself, mostly in terms of staff time as they operate at the intersection between teaching and research. Only one of the cases mentioned has received direct external support, specifically, from the UK Higher Education Academy through its Subject Networks, which fund small research and development projects on an individual or small group basis.

In these examples, reusability is not a core concern as it is in the cases discussed above, partially because these are small initiatives carried out predominantly in connection with module development (and presentation) and, this, have a different set of priorities. Another point to note is that, as Wilson (2008) points out, teachers may tend to privilege the familiar and require support in developing the required instrumental skills to engage in OER. Therefore, OER are only gradually gaining terrain within the mainstream processes and structures of the university, also as, within a large organisation, 'flexibility, in terms of an open invitation to innovate, requires a certain degree of courage', as Lane (2011) suggests.

As suggested above, course development at the UKOU is carried out in multidisciplinary MTs, and the size of a team as well as the duration of development process vary according to the level, credits and overall model of the course. Traditionally a course can take up to 3 or 4 years to be completed, from its initial planning stages (mapping of learning outcomes, budgeting, mapping of resources to be developed, co-authoring and production of resources, recruitment and briefing of tutors). However, in recent years, partially due to financial constraints, new models have been developed that aim to shorten this period consistently. In this context, the *Relevant Knowledge* (RK) suite of courses offered by the Faculty of Maths, Computing and Technology was developed to explore a shorter development process, capitalising on the phenomenal success of the first UKOU course presented on the Web, T171 *you, your computer and the net*, which counted, in a single year, with a cohort of 12.000 students (Weller & Robinson, 2002). T171 was divided into three blocks, each worth 10 credit points, and this provided the inspiration for the RK courses, which are also worth 10 credit points, taught over 10 weeks and, crucially, created through a streamlined development and production cycle of about 6-12 months, at maximum.

RK courses are currently delivered on the institutional VLE, and their development is also team-based. However, the RK course *Digital worlds*, which ran between 2009 and 2011, was created with basis on an experiment carried out on an open blog as an 'uncourse' (see *Digital Worlds* Website), that is, according to

> a philosophy based on a "teacher" modelling - or documenting - a learning journey. Uncourses fully expect the "teacher" *not* being totally knowledgeable about the subject area, but being happy to demonstrate how they go about making sense of a topic that may well be new to them. (HIRST, 2012).

The experiment drew upon the author's extensive experience as a well-known blogosphere contributor in the area of educational technologies (see OUseful.info, the blog) and had, amongst other goals, the purpose of exploring the potential of blogging as a medium for teaching and learning at a distance. The 'uncourse' lasted about 3 months, the standard presentation length of a RK course, and consisted of daily postings that incorporated a host of pedagogical and conversational devices exploring the potential of hyperlinking and Web 2.0 tools.

Loosely based on an initial map that organised the author's own learning experiences, the experiment covered a wide range of topics related to "games", including definitions of the term, the broader social and cognitive significance of "play", technologies, techniques and methods for game development as well as history, current trends and applications in the area. Although assessment was not generally included, the experiment adopted an experiential learning perspective and a constructivist pedagogical model, which constitute the perspective widely adopted at the institution. A variety of third-party materials was incorporated, including game-developing software (and associated tutorials and examples), OpenLearn resources (via linking and via remixing) and various support tools (e.g. mind-mapping).

A crucial point about the *Digital Worlds* 'uncourse' is that it counted on the participation of a number of volunteers who freely joined the project. Indeed, participants' feedback on comments was incorporated by the lead author, thus promoting an overall sense of dialogue and collaboration in a colearning environment along the lines discussed earlier. This setting stands in sharp contrast to the usual UKOU teaching and learning experience, for a number of reasons that stem from the actual conflation of the traditional "development/production" and "presentation" stages, which results in an environment for co-authorship that is much more akin to face-to-face teaching that mass-produced ODL. Indeed, integration of the experiment into the actual RK course offered by the university proved problematic, and a long production cycle still took place, with the original

"product" of the experiment having been incorporated only as one amongst a variety of subsidiary resources listed in the course.

Another area in which possibilities of OER (and open content) have fostered innovation within the main institutional structure concerns the use of creative multimedia and peer support as integral elements of the teaching and learning strategy of courses. Multimedia sharing and co-authoring is at the heart of many Web 2.0 developments, and this has begun to be explored within UKOU courses. The module T215 *Information and Communication Technologies*, for example, a 60 credit-point module, has been created to include a component that aims to encourage students to engage creatively in cyberspace. Including a block (5 study weeks) that focuses on multimedia, including concepts and techniques, the module incorporates open source software (Audacity, a sound editor, AviSynth, a video editor and AvsP, a script editor) and open content (images from Flickr and sound samples from various open repositories) into a teaching and learning strategy that aims to foster knowledge construction through creative engagement with multimedia and peer support. Part of the block assessment requires students to create, with the tools and resources provided, a 30-second video explaining a given concept (for example, 'social networking'), to a lay audience. To deliver this, students must do a fair amount of scripting, as programming skills integrate the overall learning outcomes for the course, but they must also make aesthetic choices in terms of images and sounds.

T215 was first presented in 2010, and a preliminary study by Mostefaoui *et al.* (2012) discusses issues that arose during development and the first year of presentation, incorporating some examples of work produced by students. Amongst the issues raised is the type of resistance and debate amongst course developers on the suitability of multimedia as an alternative basis for assessment in an area that is not traditionally associated with 'creativity', a notion now strongly present in official agendas and educational policy in the UK, presented as an area for further research. Another issue, more directly related to OER discussions is the (then) shy movement of students themselves towards sharing their multimedia artefacts openly. Although the module encourages students to share their work with peers within the course and openly (e.g. on video-sharing Websites), only a relatively small proportion actually appears to do so, with a modicum of (identified) sharing taking place in cyberspace, especially on YouTube. Further research on the module, aiming at exploring this aspect, is currently underway.

A second module that incorporates creative multimedia in its teaching and learning strategy is TU100, *My digital life*. This is a 60-credit, introductory course in computing and ICT, and although it was launched a year after T215, it is now expected to provide the foundation for most

students entering degree courses in the area. This module differs from the work done in T215 is several aspects, including the level of complexity, importance of other learning outcomes (which include programming as core; Richards & Woodthorpe, 2009) and overall significance of the multimedia-related work in respect to the module as a whole (MOSTEFAOUI *et al.*, 2012). The multimedia-related material is integrated as the first part of a study block that explores the social aspects of the Web. As a whole, the block guides students in an exploration of cyberspace, strategically introducing them, through practical discussion and collaboration activities, to concepts as well as constructive uses associated with Web 2.0.

More specifically, the first part of the block is based around notions of openness and creativity on the Web (FERREIRA, 2010), and it guides students on a step-by-step process of constructing a video response without requiring any previous knowledge in the area. The learning resources are structured around a series of tasks required for the completion of a multimedia object in response to a prompt video (WESCH, 2007). The set of resources includes a core teaching text, written for the Web and presented on the VLE, openly and freely available software (Audacity and Google´s Picasa) and a wealth of media artefacts for students to reuse in their own work (images from the Creative Commons pool on Flickr as well as sounds and music from The FreeSound Project and ccMixter, both of them sites that use Creative Commons licenses). Demonstrating, in practice, the use of basic techniques and concepts involved in audio and image manipulation within a narrative that retraces the steps of the author when creating her own example video, the materials adopt an approach intended to foster both creative engagement with multimedia and critical discussion of issues surrounding the production and sharing of multimedia over the Web, including intellectual property and privacy, amongst others.

The backbone of the part is constituted of practical activities, and, upon completion of the first part of the block, students have an initial take of their own multimedia object, which they need to submit to their tutor, as part of their assessment. Crucially, students are also required to share their videos on a custom-built platform, integrated with the VLE, for discussion with their peers across the remainder of the block. This, then, introduces a number of synchronous and asynchronous communication tools. Preliminary feedback gathered from tutors and students in the first presentation of the module (2011-2012) indicates that the part has been surprisingly successful in supporting student retention, as it is strategically placed at a stage of the course when evasion is high. A detailed analysis of this feedback is currently being carried out, but we remark that the practice-based scheme developed for TU100 has been adapted to generate OER in the area of Ethics and Technology (FERREIRA; WILSON, 2011), which have been used in an action research project

that evaluated the resources in the context of project-based learning in ICT (FERREIRA; WILSON, 2012; WILSON; FERREIRA, 2010).

Although attempting to incorporate elements of cyberculture, both T212 and TU100 are such that the students´ experience is mostly contained within the restraints of the institutional VLE. One of the issues that contribute to this situation is the need for scalability. With student cohorts ranging from 100, in smaller and more specialised courses, usually of higher level, to the tens of thousands, as was the case of the course T171, mentioned above, the institution needs to plan its resources carefully and, to a certain extent, conservatively. In its mass-production model of course development and presentation, estimating student numbers at the outset of a development project is an important element of budgeting, which affects, of course, the range and nature of resources and media utilised in a course. The initial proposal for TU100, for example, was the use of YouTube, but this was vetoed relatively quickly, also due to concerns with privacy, hence the investment in an institutionally developed alternative that, indeed, incorporates the main sharing, linking and comments features available on the open site. In a way, the issues that arise in the context of course development related to the uncomfortable interface between formal (institution-based) and informal (in cyberspace) learning, between 'Closed' and 'Open' education as outlined in Table 1, suggesting an area for further research that should begin to take centre-stage as MOOCs (*Massive Online Open Courses*) start to be much more widely disseminated and used.

5. CLOSING REMARKS

This paper has discussed a number of initiatives that illustrate ways in which cyberculture can and has contributed to foster innovation and openness in education. The discussion indicates that cyberculture, in particular its collaboration and co-creation aspects, can both enrich and be enriched with the recent uses of open technologies being advanced by OER communities, projects and practices. The discussion indeed suggests that OER can be viewed as an emerging landscape for colearning in cyberspace. Openness has fostered new approaches to communication, collaboration and co-authorship, creating renewed challenges for institutions, individual educators, learners, researchers and Web users in general, as pointed out in this article.

In the setting examined, 'big' OER have been opening up a vast field of opportunities for co-authorship, allowing different authors, experts and users alike, to collaborate and co-create knowledge. One of significant benefits are significant numbers of people in different physical locations colearning by sharing knowledge and practice together openly via open technologies. On the other hand, 'little' OER have been combining the affordances of collaborative media and social

technologies to co-authoring location-specific learning, despite the tensions and challenges faced. In these cases, the related initiatives appear to be challenging strongly established boundaries between formal and informal learning, pushing forward (and outwards) the very boundaries of the institution. However, all of the examples provide some evidence of co-authoring with different configurations.

OER are, indeed, opening up new opportunities for informal and formal learning. In providing open content as well as knowledge on practices being developed for their modification, they constitute sites of co-authoring to all categories of users throughout the world, learners, educators, researchers and institutions. This new approach of opening up knowledge and opportunities for collective intelligence have, indeed, strong synergy with the mission of the UKOU, and it is likely that the institution will remain at the forefront of open education as it has been so far.

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ABSTRACT

Locating Open Educational Resources (OER) as a phenomenon of cyberculture, this paper presents a reflection on the possibilities of co-authorship that are entailed in OER initiatives of different natures and settings within a large organisation. A selection of OER-related projects and activities carried out at the Open University of United Kingdom (UKOU) are examined from the perspective of a comparative framework proposed by Okada (2010). The framework identifies key features and differences between 'Closed' and 'Open' Education, that is, respectively, formal education, which takes place within the constraints of institutional Virtual Learning Environments, and informal education, which is gradually taking place more widely in cyberspace. The paper is introduced with a succinct discussion of the connection between cyberculture and the emergence of OER, followed by a presentation of the comparative framework adopted. The UKOU´s structure and methods are then presented, and various projects are discussed. The article concludes by proposing a brief commentary on the creative potential that is being unleashed at the very boundaries between formal and informal educational spaces that cyberculture is challenging.

Keywords: Cyberculture; Open Educational Resources; Co-authorship; coLearning; The UK Open University; UKOU; Open Education; Openness, Distance Education