

## A framework for online learning

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### Abstract

Decades of distance learning evolution and innovations, particularly changes due to the Internet, have led to industry and academic confusion about online learning nomenclature. This study takes a preliminary step in developing a framework for online learning. Drawing on structured and interactive content, the paper proposes three categories of online learning—resources, tutorials and courses—along a content continuum. These three categories serve as a base for illustrating online variables, which subsequently help explain the categories. The resultant framework give industry and academia common ground for discussing online learning and future research of online learning.

*Keywords:* Online learning; tourism training; distance education; MOOCs

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### 1. Introduction

Massive Open Online Courses (MOOCs), a recent and exciting distance learning iteration, are taking academia and the popular press by storm. An overly optimistic predicted outcome due to MOOCs is that half of US universities will disappear in fifty years, or sooner, and Harvard will have ten million students (Harden, 2013). On a similar upbeat note, a New York Times columnist declared 2012 as the ‘Year of the MOOC’ (Pappano, 2012).

Yet at least one academic argues that another New York Times columnist, David Brooks, confounds online learning with MOOCs. Brooks “talking about MOOCs and online courses as interchangeable and equivalent” does a disservice to both, . . . demonstrating a shocking ignorance about years of work to help design and teach small online courses that mimic the learning of a traditional seminar (Kim, 2012).”

Such MOOC versus online learning confusion also exists in academia. Few specifics and much ambiguity about the different classifications within online learning can often lead to misunderstandings (Negash & Wilcox, 2008). Similarly, the lack of a taxonomy or clear framework has led to general confusion and improper generalization of MOOC across a wide array of courses with vastly different characteristics and goals (Baker & Surrey, 2013). In hospitality and tourism, a study could not classify online courses based on technologies or intended audiences, but did classify the courses based on four provider types—academic, corporate, destination management organization and independent (Cantoni, Kalbaska & Inversini, 2009).

The growing chorus of calls for MOOC definitions and development, predicted MOOC outcomes and use of online learning support the need for a framework of online learning, and how MOOCs fit into this framework (Baker & Surrey, 2013; Cantoni, Kalbaska & Inversini, 2009; Negash & Wilcox, 2008). How online learning categories—which differ in abilities, assessment methodologies, scholarship intentions, instructional and learning strategies, resources and openness—align with different learner subsets merits investigation (Baker & Surrey, 2013).

Such a framework could help universities and academics, baffled by the hype and considering online learning initiatives, utilize or create viable online options such as MOOCs (Daniel, 2013). Most every Vice Chancellor or Rector worldwide is considering the impact of these free online courses on traditional educational offerings (Conole, 2013). This paper helps address these industry and academic needs by proposing three categories of online learning and how online learning variables align with these categories.

## 2. Literature review

### 2.1. Distance and online learning

Today's online learning options, including MOOCs, are an evolution and type of distance learning. Perhaps the first distance learning opportunity was postal (or correspondence) courses, the rage in the 1920s, with four times the enrollment of all US universities and colleges combined (Carr, 2012). Since then, the motion picture, television, programmed learning, computers and the Internet have served as additional and revolutionary distance learning platforms (Daniel, 2012).

Continued Internet evolutions and applications impact education worldwide, transforming training, instructional design and educational curricula. Internet characteristics, particularly enhanced interactivity and connectivity, make the Internet a powerful global educational platform. Learners from different countries and employees in different industries receive and interact with educational materials online, as well as engage with tutors and peers in new and diverse ways. The resultant online learning market is a complex system of academic, corporate and consumer fields that integrate myriad segments such as consultancies, training courses, services development, technology providers, academia and industry (Admiraal & Lockhorst, 2009; Bell & Federman, 2013).

Companies, especially those with large geographic distribution use online training rather than organising in-house training to update existing staff and orient new staff. The hospitality and tourism industry has adopted online learning to update the knowledge of their employees and inform their customers. Hilton and Accor hotel chains, for instance, use online training platforms for their employees (Kalbaska, 2012).

Three academic trends in online learning this century are Learning Management Systems (LMSs), Open Courseware (OCW) and open online courses (OOCs). About 90 percent of all US universities and 95 percent of all British universities have an overarching LMS, such as Blackboard or Moodle (Lonn & Teasley, 2009). Yet rather than for learning activities such as interactive discussions or collaborations, students and academics tend to use the LMS as a repository for resources such as class syllabi, announcements, lecture notes, slide presentations and readings (Lonn & Teasley, 2009; Handel et al., 2010).

While the LMS usually restricts access to registered students, the other two trends generally have open access. With the OCW movement, the Massachusetts Institute of Technology (MIT) and hundreds of other universities proudly and freely share their course materials with anyone that has Internet access (Murphy, 2012). Extending the OCW concept, OOCs allow anyone with Internet access to take a course, for free, receiving feedback, grades and recognition of participation. Massive open online courses (MOOCs) can have hundreds of thousands of students in a single course (Murphy et al, 2014).

In addition to open versus closed access as an online learning variable, the paper discusses variables related to assessment, recognition, credit, affiliation, synchronicity and content. This last variable, content, serves as the basis for three broad categories of online learning and subsequent discussion of variables across and within these three categories.

## 3. Conceptual model: from resources to courses

Distance learning and related variables have existed for well over a century. This paper uses content, particularly structured and interactive content, as the key variable for categorising online learning. Content is a continuum from resources to tutorials to courses; most other online learning variables are also a continuum. Resources provide rich and diverse educational materials but usually lack the structure of a traditional course, presence of a lecturer or interactivity such as forums, activities, quizzes and other assessments. Between resources and courses, online tutorials usually provide no lecturer, limited course structure and interactivity and similar to resources, are generally self-directed.

A broad resource example is YouTube's Education Channel <[youtube.com/channel/HC-r1FlvvNFs0](https://www.youtube.com/channel/HC-r1FlvvNFs0)>, an automatically generated video collection for learners of all ages. Another resource is Technology, Entertainment, Design (TED) <[ted.com](http://ted.com)>, a nonprofit devoted to spreading powerful ideas via a library of almost two thousand short talks, usually videos under eighteen minutes. In tourism, the International Federation for Information Technology and Tourism (IFITT) eTourism curriculum [ifitt.org/home/view/the\\_ifitt\\_eTourism\\_curriculum](http://ifitt.org/home/view/the_ifitt_eTourism_curriculum) shares

resources including information and communication technology case studies, reference lists and lecture slides across three areas: introductions, case studies and trends.

Moving along the content continuum, tutorials have more structure and pedagogy than resources. For example, Google's digital marketing tutorials open with a preparatory tutorial, introductory tutorial and then seven subject tutorials <[google.com/onlinechallenge/dmc/](http://google.com/onlinechallenge/dmc/)>. The tutorials contain learning objectives, videos, examples, case studies and exercises. Members of Building Excellence in Sustainable Tourism Education (BEST EN), a collaborative network of tourism academics and practitioners, develop and share sustainable tourism tutorials <[besteducationnetwork.org/Teaching\\_Materials](http://besteducationnetwork.org/Teaching_Materials)> with pedagogical resources similar to Google. The Australian Tourism Data Warehouse (ADTW) provides 60 tutorials across nine subject areas <[tourismekit.atdw.com.au/ekittutorials](http://tourismekit.atdw.com.au/ekittutorials)>, with similar pedagogical materials in addition to questions and suggested answers. ADTW is one example of 75 National Tourism Office (NTO) online tutorials (Kalbaska, 2012).

The final tutorial example, the Open Course Ware (OCW) movement mentioned above, provides all the learning materials for a university course but none of the classroom interaction. OCW resources have generated a strong response without any additional OOC features such as enrollment, quizzes and assessments, assignment deadlines, statements of accomplishment (Cooper & Sahami, 2013). These seemingly evolutionary and additional features to OCW allow the recent set of OOCs to cross the line from educational resources and tutorials to courses. Well-known and popular OOC providers include Coursera.org, edX.org, Alison.com, KhanAcademy.org and Google.com.

In summary, online learning materials fall into three broad categories—resources, tutorials and courses. These somewhat overlapping categories along the content continuum increasingly add structure, interaction, synchronicity, supervision and recognition.

## 4. Discussion

### 4.1. Costs and access

Two variables, costs and access, help distinguish among and within the three content categories. MOOCs are a common online course example, but higher education institutions such as the University of Phoenix and the Open University have offered online courses for decades. Two key distinctions that qualify online courses as OOCs are no cost and open access.

As a rule, resources have no cost and open access. The resource examples above—YouTube's Education Channel, TED and IFITT's eTourism Curriculum—require no fees, no registration and are open to anyone. Some tutorials, particularly OCW, are similarly open to anyone. As of 17 April 2014, the Open Courseware Consortium listed 25081 courses from 78 providers, such as MIT mentioned above <[ocwconsortium.org/courses](http://ocwconsortium.org/courses)>. Anyone with Internet can access these OCW materials.

Other tutorials, however, may restrict access or have a minuscule cost such as the time to register. To access Google's Digital Marketing tutorials, for example, one must log into a Google account such as Gmail in order to access the videos and other content. Similarly, one must create a free account to access the BEST EN tutorials. NTOs restrict their free tutorials, such as those by ADTW and the Switzerland Travel Academy, to those in the tourism industry.

In a study of 75 NTO tutorials, travel agents had to provide their official registration number for 68 tutorials (Kalbaska, 2012). Travel agents also had to provide personal information and professional data, such as sales volumes, markets, client segments and destinations they sell. In some cases, registered travel agents have personal profiles that track completed modules and testing activities.

As noted, costs and access are a major distinction between online courses at universities and OOCs. Universities charge a fee and require both acceptance then registration. Furthermore, some online courses may have pre-requisites such as completing a basic math course before enrolling in an advanced math course. OOCs are open to anyone, albeit some OOCs have suggested pre-requisites. Apart from the time to register and sharing supposedly accurate personal information, OOCs cost nothing. Recognition is another distinction between university and open online courses.

#### 4.2. Recognition, assessment and interaction

Interaction, which tends to increase along the content continuum, varies across formality, automation and personalisation. Research suggests three types of interaction—student with teacher (ST), student with student (SS) and student with content (SC)—improve learning (Negash & Wilcox, 2008; Piccoli, et al., 2001). A meta-analysis of about one thousand articles found that increasing SC showed the greatest effect, followed by SS and ST (Bernard et al., 2009). SC interaction examples include frequently asked questions (FAQs), automated testing and simulations (Anderson, 2003; Daniel et al., 2009).

SC and SS interaction in resources and tutorials includes the ability to search, a FAQ section and opportunities to post comments. Two resources for example, YouTube's Educational Channel and TED, allow SC interaction via their search functions and SS interaction via the ability to comment on videos. Tutorials expand SC and SS interaction over resources, such as an IFITT wiki <[ifitt.org/home/view/ifitt-e-tourism-wikipedia](http://ifitt.org/home/view/ifitt-e-tourism-wikipedia)> that gives SC and SS interaction, respectively allowing visitors to edit the content and discuss those edits. Tourism destination tutorials offer SS interaction via forum and chat functions. Yet even with the possibility to interact with other travel agents, many discussions are unmoderated and users rarely chat (Kalbaska, 2012).

Few if any resources offer any assessment or recognition of such assessment. Tutorials may expand SC interaction via assessment, such as multiple choice and true/false questions. The University of Western Australia (UWA) opens its Communication and Research Skills tutorials to anyone, and UWA students must pass the tutorials as part of their first-year orientation <[student.uwa.edu.au/learning/resources/cars](http://student.uwa.edu.au/learning/resources/cars)>. Some tourism tutorials may provide a specialist certificate upon successful completion. Users, in this case travel agents, have a certificate and subsequent competitive advantage as a recognised specialist (Cantoni & Kalbaska, 2010).

Few if any resources or tutorials, however, provide ST interaction. A learner could email questions to the tutorial author, such as an MIT or BEST EN academic, but there is no guarantee the academic will respond. Courses advance beyond tutorials by tending to add ST interaction as well as more assessment and recognition. Recognition, in addition to cost and access mentioned earlier, is a key variable among online courses and varies from no recognition to full credit at a traditional university.

#### 4.3. Online courses

ST interaction varies across courses. Traditional university online courses and most MOOCs have a designated lecturer managing the course, assigning due dates, monitoring forums, and providing feedback. Other online courses, however, rely solely on automated testing and an asynchronous course format.

The type of credit for an online course usually relates positively to monetary cost. For example the University of Florida, a large public university in southeastern USA, grants four-year bachelor degrees online, with the same entry requirements, content and rigour as their on-campus programs <[distance.ufl.edu/bachelors](http://distance.ufl.edu/bachelors)>. HooteSuite University <[learn.hootsuite.com/](http://learn.hootsuite.com/)>, a startup social media education venture, charges US\$ 21 monthly to access its courses and HootSuite certification for those that pass a series of exams. The American Hotel and Lodging Association Educational Institute (AHLAEI), founded in 1953, offers over 30 online courses <[ahlei.org/Programs/Distance-Learning/](http://ahlei.org/Programs/Distance-Learning/)> for about US\$ 200 each and AHLAEI certificates for those that pass the exams. As these examples illustrate, the type of credit also relates to the granting institution.

The above three examples, which all charge a fee, also illustrate the distinction between online and open online courses. Students must meet entry requirements for the University of Florida courses but not for HooteSuite or AHLAEI courses. Apart from the time to complete the free registration process, open online courses cost nothing.

Open online courses however, may charge for formal recognition. Students successfully finishing a Coursera MOOC, for instance, usually receive a free statement of completion signed by the instructor. Coursera's signature track option, US\$ 30-90 and available for some courses <[coursera.org/signature/guidebook](http://coursera.org/signature/guidebook)>, affirms the learner's identity and links to a verified certificate on a unique, secure URL on the Coursera site. Coursera also partners with universities to give formal credit for some MOOCs. For a fee of US\$ 195, the University of California San Diego (UCSD) for example, will award (UCSD) credit to students that pass the 'Climate Change in Four Dimensions: Scientific, Policy, International, and Social' MOOC <[extension.ucsd.edu/studyarea/index.cfm?vAction=singleCourse&vCourse=BIOL-40282](http://extension.ucsd.edu/studyarea/index.cfm?vAction=singleCourse&vCourse=BIOL-40282)>.

Somewhere between formal credit and a signed statement of participation, the Khan Academy offers free energy points and over one hundred badges across six progressive badge classes <khanacademy.org/badges>. These extrinsic rewards help motivate students, particularly young students, but may lead to an illusion of understanding (Clark, 2013). In addition to recognition, the Khan Academy offers assessment and in many cases ST interaction.

## 5. Conclusions, limitations and future research

This paper proposed a framework of online learning based on three progressive categories of structured and interactive content. The first category, resources, are loose collections of learning materials. Tutorials, the next category, tend to add structure and interaction with both the content and other students. Finally, courses have the structure of a traditional class, assessment and oftentimes a lecture managing the course.

The paper also reviewed and applied several variables—interaction, assessment, access, recognition—to these categories. A main limitation of this preliminary study, is the difficulty in reviewing the new and dynamic subject area of open online courses (Daniel, 2013). A second limitation, and promising future research area, is the few online learning variables and limited discussion of the given variables.

Two additional online learning variables to consider are synchronicity and presence (Negash & Wilcox, 2008; Tankelevičienė & Damaševičius, 2009). For example, what are the learning outcomes of convenient asynchronous courses versus fixed synchronous courses? And what influence does the real-time presence of learners and lectures have on learning?

This paper reviewed just one type of openness, open access. Open can also refer to the learning environment, that is the extent that the learner can control the presentation (Piccoli, et al, 2001). On a related note, Baker and Surrey (2013) propose a taxonomy for differentiating and classifying online learning environments. Lastly, openness may relate differently to two common MOOC types, the xMOOC and cMOOC (Rodriguez, 2013). This relationship as well as the MOOC type is a promising future research avenue.

Staying with MOOC type, authors go beyond just two MOOC types (Conoly, 2013; Shimabakura, 2013). Albeit, this paper argues the alternatives are simply online courses rather than MOOCs. This MOOC versus online course disagreement supports the need for future research of online course types and related variables.

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