# From OER to PLAR: Credentialing for open education

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## Abstract

Recent developments in OER and MOOCs (Open Educational Resources and Massive Open Online Courses) have raised questions as to how learners engaging with these courses and components might be assessed or credentialed. This descriptive and exploratory paper examines PLAR (Prior Learning Assessment and Recognition) as a possible answer to these questions. It highlights three possible connections between PLAR and open education which hold the greatest promise for credentialing open learning experiences: 1) PLAR may be used to assess and credential open educational activities through the use of exam banks such as CLEP (College Level Examination Program); 2) Learning occurring in xMOOCs (MOOCs based on already credentialed courses) and in other open contexts resembling "courses" may be assessed in PLAR through course-based portfolios; and 3) PLAR may also be enabled through the specification of "gap learning" facilitated through OER of many different kinds. After describing these options, the paper concludes that although the connections leading from open educational contexts to PLAR credentialing are currently disparate and *ad hoc*, they may become more widespread and also more readily recognized in the PLAR and OER communities.

**Keywords:** OER; PLAR; MOOCs; self-directed learning; informal learning; credentialing

## Introduction

In the decade since the founding of MIT's Open Courseware Initiative in 2002, Open Educational Resource (OER) projects offering course materials online at no cost have proliferated in number and kind. Efforts such as WikiEducator and OER Commons provide tens of thousands of course components; the Open Courseware Consortium offers similar numbers of whole courses. Initiatives such as OERu, finally, are working to provide entire degree programs complete with tutorial services online at zero (or minimal) cost.

All of these developments raise the question as to how learners who work through these components, courses or programs might be assessed and credentialed. If the many existing OER initiatives are to realize their full potential, the education that they facilitate must be recognized and also rewarded in some way by prospective employers and by educational institutions. This issue has recently attracted a great deal of attention, with one area of particular interest being the use of "micro-credentials" or "open badges" (e.g., Peck, 2012; The Mozilla Foundation, Peer 2 Peer University & The MacArthur Foundation, 2012). This paper addresses the matter of credentialing open education by critically comparing and contrasting the solutions suggested within the OER world with an established educational alternative. This alternative is PLAR, Prior Learning Assessment and Recognition[1] a service already available at many colleges and universities, particularly those with flexible or open admissions policies. In the light of the developments described above, PLAR has been called "a less-hyped 'disruption' to traditional higher education" (Fain, 2012, n.p.).

The paper begins with a survey of the aspects of OER that are relevant to credentialing, placing special emphasis on open badges and synchronously delivered open online courses (also known as MOOCs, or Massively Open Online Courses). It then introduces PLAR as a set of policies and practices, and also examines the compatibility of PLAR with OER projects and practices. It shows

that some of the most popular approaches to OER and to credentialing, such as badges, personal learning environments and/or the use of course components for self-study are actually *least* compatible with PLAR assessment, and that emerging open course models and established standardized testing procedures actually present far greater possibilities for credentialing through PLAR.

## OER, OCW, MOOCs and badges

OER, a term first adopted at a 2002 UNESCO forum, is generally taken to refer to the "provision of educational resources, enabled by information and communication technologies, for consultation, use and adaptation by a community of users for non-commercial purposes" (UNESCO, 2002, p. 24). Thus defined, such resources can be of relatively fine "granularity" (e.g., modular course components supporting small units of learning), or much coarser (e.g., a 13-week course or even a program, for example). These larger components are generally referred to as "Open Courseware" or OCW. Whether courses or course components, these resources could conceivably be reused (with or without modification) by an instructor in an online or face-to-face classroom. However, as the breadth of the definition of OER indicates—and as confirmed by empirical research (e.g., Masterman & Wild, 2011)—the typical uses of OER are generally much less structured. Their users are generally individuals or small groups of self-directed learners engaged in self-study. For example, among the most popular uses of OER is "addressing learners' specific needs [by] providing opportunities for supplementary learning, skills development and presenting content in different ways" (Masterman & Wild, 2011, p. ii). Additionally, a study of the resources made available by the MIT OCW Initiative shows that the vast majority of access is for the purpose of informal, unstructured learning (including most prominently, for "enhancing personal knowledge" or "complimenting a course" or "exploring interests outside of [one's] professional field" [MIT OCW, 2011]).

Both MOOCs and badges refer to phenomena or ideas that are much more recent than OER. There are currently no studies of overall forms of use, design or utility of MOOCs or badges—only news items, discussion papers and exploratory reports. As an idea and a set of practices, the synchronous "open course" was pioneered in Canada by George Siemens and Stephen Downes in 2008, with Stanford and other institutions following their lead in 2011 and 2012. In the case of the Stanford course mentioned above, news outlets reported that tens of thousands of users from over 150 countries signed up for the class (see: Markoff, 2011; Leckart, 2012). The creators of this course have since founded *Udacity*, a private venture offering six eight-week courses in computer science for the fall of 2012. MIT undertook a similar open course (6.002x, Circuits and Electronics) in the same timeframe, and garnered 120,000 registrants. It is subsequently developing MITx, which as MIT explains "will offer a portfolio of MIT courses for free to a virtual community of learners around the world" (MITx, 2012, n.p.). MIT has also joined up with Harvard to form EdX, which has similar ambitions—but is larger in scale—than Udacity or MITx. In terms of certification, it is worth noting that both the Stanford and the MIT open courses offered students successfully completing the course a "Statement" or "Certificate of Accomplishment"—which make clear, however, that the accomplishment is not equivalent to a the completion of a "normal" Stanford or MIT course. Other start-ups and individual innovators are following suit in institutions across the US, including the for-profit Coursera, which has almost 2 million registrants, over 100 courses, as well as a rather controversial business model (Coursera, 2012b).

A digital or open badge refers to "an online record of achievements, tracking the recipient's communities of interaction that issued the badge and the work completed to get it" (The Mozilla Foundation *et al*., 2012, p. 3). This definition is provided by a discussion paper from the Mozilla Foundation (responsible for developing the Firefox browser). Coming from this foundation, it is not

surprising to learn that open badges have been defined largely in technical, infrastructural terms. Specifically, these badges are described as an open technical infrastructure or "framework," one that would allow anyone on the web to issue a visual symbol of achievement to anyone else on the web in a manner that can be controlled, verified and designed to prevent forgeries.[2] This framework has attracted considerable interest, as *The Chronicle of Higher Education* reports:

> [These] education badges [are] designed to . . . give potential employers details about the distinctions at the click of a mouse. Hundreds of educational institutions, traditional and nontraditional, have flocked to a $2-million grant program run in coordination with the John D. and Catherine T. MacArthur Foundation, seeking financial support to experiment with the educational-badge platform. (Young, 2012, n.p.)

In keeping with the relatively fine granularity of some open educational resources mentioned above, these badges are typically *not* seen as standing in for credentials on the level of an entire program or course. They are instead envisioned as signifying fairly specific kinds of achievements and competencies. Examples offered in the Mozilla discussion paper include credentialing for success in a "'hackfest' competition" or for knowledge gained through work on "personal projects." Professor and open education advocate David Wiley, who has experimented with badges in online teaching, explains:

> rather than being a token representing course-level achievement, each badge is a token representing the achievement of a learning outcome. . . . In the open education course I'm currently teaching. . . [s]uccessful completion of an assignment results in the learner receiving a badge" (Wiley, 2012, n.p.; see also The Mozilla Foundation *et al.*, 2012, p. 5).

Wiley goes on to argue that used in this way, these badges offer the potential to address a range of problems that are currently presented by transcripts and other credentialing systems for both the institution and the learner. These begin, he explains, in difficulties in accessing and deciphering course grades and transcripts:

> They can be shared publicly by a learner (or not—the learner is in control of his own data) so that any potential employer or school can review them. . . their authenticity can be verified by any interested party. They indicate mastery of a specific learning outcome as opposed to a "grade" in a "course." And they can optionally provide links through to the artifacts students submitted to demonstrate mastery. Students get control of their own learning data and employers and schools get both immediate access and better detail. . . So a move to learning outcomes-aligned badges. . . [is one] in which both the institution and the learner win. (Wiley, 2012, n.p.)

As an infrastructure or framework, Mozilla's solution clearly models a small subset of functions provided by a registrar's office at any postsecondary institution (albeit with the potential of much greater efficiency, possibly also with greater potential for security issues). As a credential, the conditions under which a badge is awarded can be controlled by the organization issuing the badge. Access to it can be precisely controlled by the student or graduate. It potentially forms a highly efficient conduit for controlling, transmitting and receiving credentials. However, it is not clear exactly what significance the credentials travelling on this efficient and user-friendly infrastructure will have. The Mozilla discussion paper admits that "in order for any badge system to accumulate value and for badges to carry or contend with the weight of formal grades or degrees, quality and vetted assessments will be critical" (The Mozilla Foundation *et al.*, 2012, p. 8). However, the same document offers little indication of how these critical issues of quality and "weight" will be addressed.

Badges, open courses, open resources and courseware all present promising possibilities for credentialing. At the same time, the questions of quality and weight referenced in the Mozilla report apply to nearly all of these resource types and technologies. Because courses and educational content are being made available online in unprecedented *quantity*, it does not follow that issues of *quality* are also automatically satisfied. And a system such as Mozilla badges leaves unaddressed

the complex and urgent question of how the academic significance or market value of these credentials will be measured and understood. It is one thing to bring educational content and credentialing data to the celebrated speed and ubiquity of the Internet; it is another to establish fruitful connections with systems of economic value and social capital—systems predicated on economies of scarcity and lack rather than instantaneity and plenitude.

## PLAR basics

This last point sets the stage for the practices and policies of PLAR, which offer an established alternative for operating in the credentialing "economy" of degree-granting institutions. As an international field of practical and administrative endeavour, Prior Learning Assessment and Recognition has developed in a range of institutional contexts over the last 50 years, with its policies and practices only very recently being brought together and compared internationally. These practices and policies differ quite widely between countries and even institutions; consequently, the field can be best characterized on either a macro or a micro level, on the most general terms or through quite specific examples. One source defines PLAR in general terms as

> a systematic process to evaluate and accredit learning gained in a variety of contexts by assessing relevant learning against the standards required by the admitting institution's courses and programs. [It] includes all those things individuals know or can do at the point where they decide they wish to obtain recognition, that is, become formally qualified. . . through a credential awarded by a recognized postsecondary institution. (Wong, 1996, pp. 1–2)

This definition makes the institutional origins and orientation of PLAR quite clear: the focus is to evaluate learning that has occurred outside of a given degree-granting institution, but still in relatively strict accordance with the criteria of that institution. Unlike the scenarios invoked by the Mozilla discussion paper, the credentialing offered by PLAR is *not* on the level of detail or granularity of many open educational resources or activities. The type of recognition offered by PLAR would not be, for example, for winning a "hackfest" competition or for the completion of a single course outcome or assignment. Instead, for PLAR, the "course" is generally the smallest unit of analysis, with groups of courses or course credits being the most common objects of assessment in this field. Reflecting its origins some 20 years before the advent of the World Wide Web (to say nothing of the Web's more recent 2.0 or participatory incarnations), PLAR has generally focused on learning occurring in the widest range of contexts, including:

1. Formal learning obtained at institutions without the possibility of direct credit transfer, including overseas qualifications (e.g. granted in a foreign language) and continuing education courses;
2. Work-related experience and training, such as on-the-job training or employer-sponsored training programs;
3. Local community or political work, generally undertaken on a volunteer basis;
4. Informal, self-directed learning, alone or in a work or community context. (see: Wong, 1996, p. 2)

In many cases, it is only informal, self-directed learning, the last of these various types of learning, that is given sustained consideration in discussions of accreditation for OER. From the perspective of PLAR, learning occurring on the Web is only one of a number of types of learning to be addressed under this particular rubric. PLAR scholars in Canada point out, for example, that 80% or more of working-age adults participate in informal learning of some kind (Wihak & Hall, 2011), and that in the workplace, 70% of relevant learning is acquired through informal means of various kinds (Carliner, 2012).

The ways in which PLAR seeks to address and accredit at least some constituents of this vast "sea" of unrecognized learning is through processes of assessment that are generally quite localized and individualized. These typically involve the work of a PLAR office or facilitator (e.g., one made available by a community college, a distance education institution or a professional association) who assists the student to document learning claims. This PLAR expert is sometimes joined by one or more content experts (e.g. professors) who may also assess the learning. The methods for assessing and accrediting typically used in PLAR include:

1. The assessment of a *portfolio* compiled by the learner documenting previous learning either in terms of general competencies (e.g., those acquired through a degree program) or specific outcomes (e.g., those acquired through a course). Portfolios of this kind typically serve to summarize the learning gained from a range of non-formal and informal learning experiences. From an open or online learning perspective, they can be considered equivalent to e-portfolios, but with a significant reflective emphasis.
2. The assessment of knowledge through an examination, also known as a "challenge exam." As the phrase suggests, this is a type of test that learners can take in order to prove that they possess forms of knowledge (and less often, skills) that are equivalent to those required in or produced through a particular course or curriculum.
3. The assessment of knowledge in an interview or other context in which performance and competency (e.g., in verbal communication) can be assessed.

With the possible exception of the second option, of taking a challenge exam, the methods used in PLAR to assess learner achievement are rather demanding, both from a time and resource perspective. They frequently involve not only an expert in PLAR, but also one in the subject matter or competency being assessed. Moreover, these methods of assessment are often used in different combinations. A portfolio may be assessed along with an interview with the learner, or the results of an examination may be used together with more qualitative kinds of data. Consequently, as one study concludes: "PLAR methodologies are presently very labour intensive and unlikely to scale well for large numbers of learners" (TEKRI, 2011, p. 9).

However, this has not prevented some relatively optimistic speculation about the adaptability of PLAR to OER. For example, the document "OER for assessment and credit for students project" [sic] claims as follows:

> The knowledge, research and experience derived from the large-scale open distance learning institutions in providing assessment services at a distance, combined with refinements to existing protocols for Prior Learning Assessment and Recognition (PLAR) could open pathways for assessment and credit services for students where traditional delivery models are unable to respond to the growing need for post-secondary education worldwide. (TEKRI, 2011, p. 1)

It remains to be seen how adaptable PLAR may be to the yet unknown levels of demand produced through OER.

## PLAR portfolios

One of the most popular forms for PLAR is the portfolio, but it is significantly more labour intensive and less scalable than challenge exams (which are discussed below). Portfolios used in PLAR can vary in structure and in terms of the evaluation process to which they may be subjected.

Course-based portfolios seek to identify very clear one-to-one correspondence between student learning to be evaluated and recognized, and the learning outcomes of a specific course. A student might, for example, be given a list of the learning outcomes for an introductory business course on management (e.g., "differentiate where a supervisor fits into an overall organization hierarchy"), and

then describe his or her relevant experience as a manager related to each outcome. This type of technique is used at many post-secondary institutions where PLAR services are provided.

A small number of institutions in North America, including Thompson Rivers University, Athabasca University, and Empire State College, take this "matching" or "correspondence" approach even further. They allow students to submit portfolios that may be considered equivalent to multiple courses or blocks of elective credits. These institutions see portfolios as having the potential to demonstrate learning that would be equivalent to more general, program-level learning outcomes, rather than the very specific outcomes of individual courses or course-units. For example, Thompson Rivers University (TRU) differentiates between competency- and course-based portfolios (TRU, 2012). Competency-based portfolios in this context are generally assembled to make the case that a student has knowledge and learning equivalent to a number of *elective* credits (rather than required credits) to be accumulated for the completion of a degree program. Both the elective credits and the relevant life experience are selected from a range of possibilities, implying a certain amount of flexibility on both the institutional and the individual sides of the PLAR equation. Learning acquired, for example, through a combination of paid and volunteer work experience would be described in detail, and supported through a wide range of third party documentation, from supervisors, organizations, etc.

Of course, various portfolio types and other demonstrations of competency can be combined to produce different collections of evidence: Matches between individual experience and course outcomes might be combined with an interview, paper or a test through which other aspects of learning are demonstrated. Quoting one PLAR expert, a recent article appearing *Inside Higher Ed* explains:

> the student must explain that he or she has learned the concepts taught in a particular course at an accredited college. . . complete with detailed information that matches up with the content and actual syllabus of that course. Each course-based description is "very similar to an end-of-course term paper," [as one PLAR expert says]. And although it can be a bit less formal than a research paper, "each concept needs to be addressed specifically." (Fain, 2012, n.p.)

The conclusion that this same article draws based on this rather rigorous set of demands is that gaining credit equivalencies through PLAR may be only *slightly* less challenging and less expensive than learning in a formal educational context: Some ". . .students might decide it's easier to retake an equivalent course at a traditional college than to seek prior-learning credit" (Fain, 2012, n.p.). While flexible and broadly accommodating, the portfolio method of assessment is likely not the most attractive pathway—either for a student having completed an open learning experience or for an institution wishing to assess one.

## OER to PLAR: Not getting lost in translation

However, it would be misleading to conclude that there is no direct or effective path from OER to PLAR: The institutional orientation of PLAR, and the individualized uses typical for OER present a number of possibilities that may be attractive for learners and institutions alike. These are to be found where bodies of knowledge or sets of skills required for credit are highly standardized, and where the uses of OER are *not* particularly idiosyncratic or personalized. In these cases, a general uniformity in the kind of knowledge required, or in the type of learning experience assessed, present attractive possibilities of moving from OER to PLAR.

Challenge exams and standardized high-stakes testing can, in some knowledge domains, be used to demonstrate knowledge that is equivalent to that which might be gained in a course or set of courses. This type of testing of extra-institutional learning for accreditation has long been a feature of higher education in the US (Keeton, 2000; Travers, 2011). Operated by the College Entrance

Examination Board, the College Level Examination Program (CLEP) a particularly important resource or service in this regard was developed in 1967. CLEP exams focus on lower level postsecondary learning, with 33 exams in 5 subject areas: History & Social Sciences, Composition & Literature, Science & Mathematics, Business & World Languages. (Specific exam topics include introductory psychology, principles of management, pre-calculus and college composition; see CLEP, 2012.) The DANTES (Defence Activity for non-Traditional Education Support) is a similar resource which allows military personnel to earn academic credits for their learning from military training and experience (e.g., in "Introduction to World Religions" or "Organizational Behavior", DANTES, 2012). Both Thomas Edison State College (http://tesc.edu/) and Excelsior College (http://excelsior.edu/) have created exam programs similar to those of CLEP and DANTES. CLEP and the Excelsior College exams are already endorsed by the American Council on Education for acceptance as academic credit towards college and university programs. Administered through international networks of secure, computerized testing centres, these standardized exam programs have the potential to provide large scale assessment at a distance.

These existing exam programs could be used to assess learning from open courses or MOOCs, to the extent that this course-based content might line up against the subject-matter tested in a given assessment. Indeed, the UNESCO-funded OER University has identified eight courses available as OER content from consortium partners to use as prototypes for such study and examinations. Four of these courses have content related to existing CLEP exams: College Composition, College Math, Introductory Psychology, and Principles of Management. Recognizing this opportunity, Excelsior College, which has its own examination program, has already introduced the "$10K Degree" program which allows distance education students to earn a degree cheaply (by North American standards) through a variety of selected OERs (e.g. those of Khan Academy), which have been matched with Excelsior's examinations (Fain, 2012). Of course, the range of subjects covered by existing exam programs is quite limited. It is much more difficult, for example, to see standardized testing as being able to measure the equivalent of courses in classroom management or advanced philosophy than basic courses in chemistry or calculus.

Central to the *second* path leading from OER to PLAR is the synchronous open online course or MOOC. Synchronous, open, online courses offer particular promise because of the general uniformity of the learning experience and structure that would likely be part of the successful completion of such a course. Indeed, the article from *Inside Higher Ed* cited above refers precisely to the possibility of a connection between MOOCs and PLAR, and quotes a PLAR expert as saying: "We see MOOCs as yet another structured learning experience offered outside of the traditional college classroom setting" (Fain, 2012, n.p.). It is this structure that allows the outcomes of an open online course (massive or otherwise) and of its various components to be compared in a PLAR assessment to that offered by an institution already affiliated with the PLAR service. The fact that the open course in this example may have been developed and offered by a faculty member from Stanford or MIT—and that the student received a statement of accomplishment from the same institution—would only make the PLAR process easier. This same article on MOOCs and PLAR provides the following scenario:

> A student successfully completes a MOOC. . . . The student then describes what he or she learned in that course, backing it up with proof, in a portfolio developed with the help of LearningCounts.org or another service, perhaps offered by a college. . . "It's just a matter of time," said Chari Leader Kelley, vice president for LearningCounts.org, which is a subsidiary of the Council for Adult and Experiential Learning (CAEL). And Kelley said CAEL will be ready to handle those submissions. "We are set up to do that. The infrastructure is there." (Fain, 2012, n.p.)

Alternatively, given the large numbers of students enrolled in many MOOCS, it might be feasible for a proctored challenge process to be created that tests students learning and allows them to earn

academic credit. This route may be explored by the institution that itself originated the MOOC or it may be developed by an unrelated institution. For example, Coursera is having a few of its MOOCs evaluated by the American Council on Education for academic credit (Coursera, 2012a). PLAR experts are indeed ready and able to translate the experience of a successful MOOC participant into the language of accreditation used by a registrar's office.

MOOCs and OCW may also help to solve a persistent problem in the use of course-based PLAR methods. Often, a student is able to meet some but not all of the learning objectives of a particular course. In the typical post-secondary context, such a student is left with no option but to take the entire course to acquire the absent components. MOOCs, however, may offer students the opportunity for "gap training" needed to fill in this missing knowledge, and to then complete the course successfully through a PLAR portfolio and/or challenge exam.

The reason for the compatibility between MOOCs or OCW and PLAR, of course, is because the terms of reference used on either side of the PLAR equation referenced above are readily comparable. MOOCs and OCW both offer a learning experience readily comparable to a course for which a student would be eligible for credit. For similar reasons, very specifically defined competencies or sets of competencies, acquired through OER or similar resources, could also be translated into institutional accreditation through the successful completion of an exam designed to test these competencies. It is possible to schematize these hypothetical elements and their interrelationships as follows (Figure 1, below).
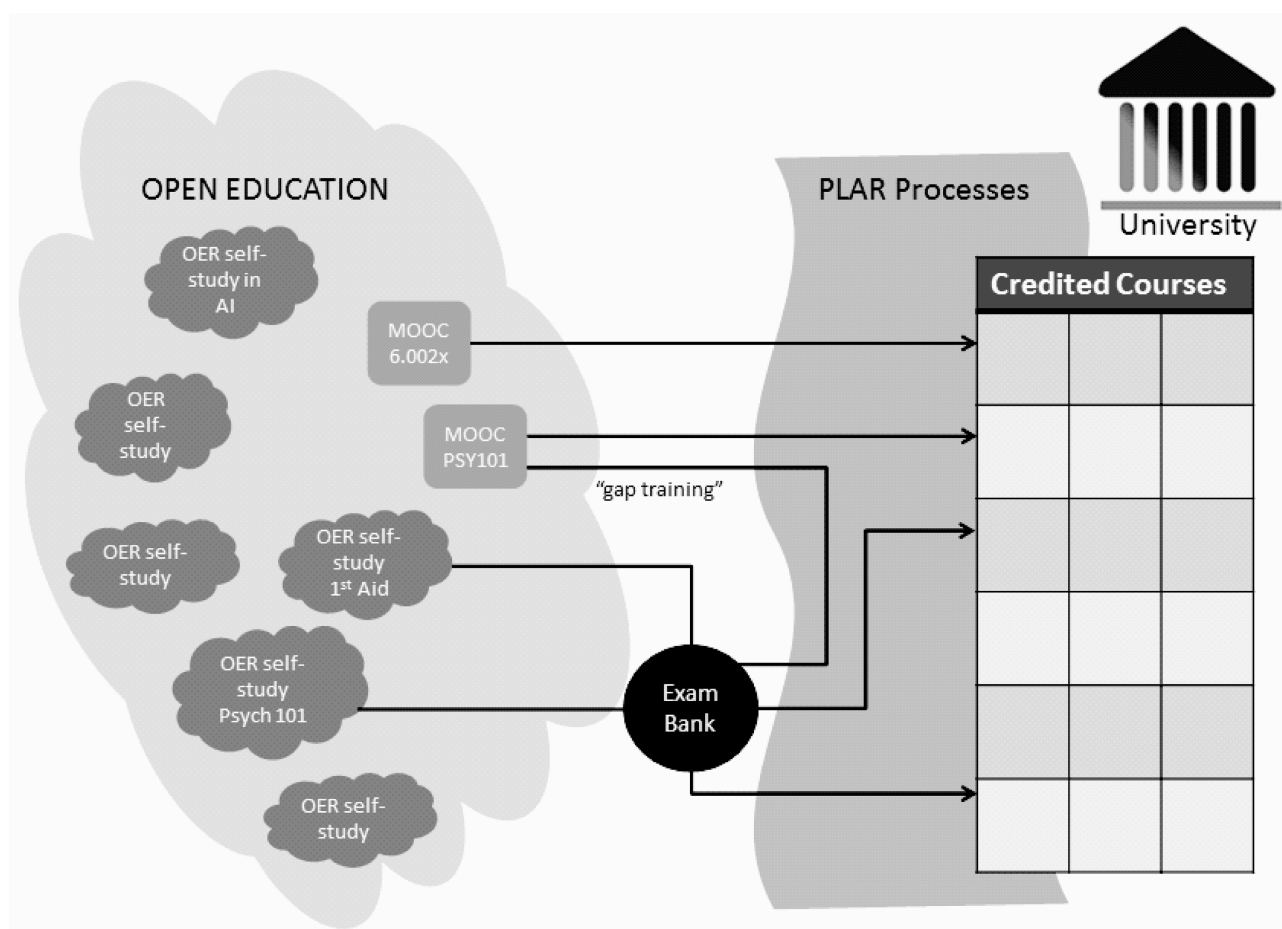


**Figure 1: Open education learning experiences and their possible recognition via PLAR processes**

## Conclusion: From humble beginnings. . .

The worlds of OER, OCW and MOOCs on the one hand and institutional accreditation on the other can be bridged, as the above diagram indicates, if one or more bases for comparison between open educational experiences and institutional categories and requirements can be established. The relatively amorphous and varied forms of self-directed learning shown on the left in this diagram can be considered comparable to institutional categories on the right only if they can take on a "shape" or "form" that fits the comparatively uniform expectations of an accrediting institution. Through standardized examinations, and other, admittedly more resource-intensive processes such as portfolio assessment and identification of gap training opportunities, PLAR has the potential to make crucial contributions to this translation process. In this scenario, a technical infrastructure such as open badges may have a role to play, but any difficulties of access and transmission between granter, student and other recipients of credentials are dwarfed by the challenge of having these parties agree on their actual value.

As the above diagram shows, the possibilities for translation between the worlds of OER and PLAR are clearly represent exceptions, rather than any sort of prevailing rule. They are fragmentary, piecemeal and as of yet, largely untested. However, it is conceivable that from these humble beginnings, a wide range of educational and credentialing practices may soon emerge.

## Notes

[1]  The process of assessing and granting some type of formal recognition for learning acquired outside of formal education is known by different acronyms around the world: RPL (Recognition of Prior Learning), PLA (Prior Learning Assessment), VINFL (Validation of informal and non-formal learning), and APEL (Assessment of Prior Experiential Learning), to name those most commonly used.

[2]  Technically, it takes the form of an API [application program interface] and a metadata specification that links granter and recipient (and optionally, the product or creation that the student produced to receive the credential).

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