"OPEN LEARNING 2.0?"
ALIGNING STUDENT, TEACHER AND CONTENT FOR OPENNESS IN EDUCATION

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Introduction

Recent years have seen a flurry of bold experiments combining education with open practices and technologies. These have been taking place in volunteer or not-for-profit efforts such as P2P U (http://p2pu.org), WikiEducator (http://wikieducator.org), and OERu (Open Educational Resource university; http://wikieducator.org/OER_university), in forms such as massive open online courses (moocs) and communities and collections of shared resources, such as MERLOT (http://merlot.org) and Connexions (http://cnx.org). A number of these experiments are being actively funded by organizations such as the Hewlett and the Bill and Melinda Gates Foundations; others have different business models and sources of support. Open educational content of all kinds has been defined as "teaching, learning or research materials that are in the public domain or released with an intellectual property license that allows for free use, adaptation, and distribution" (UNESCO 2011, n.p.). Collections of these kinds of resources, of which MIT's Open Courseware Initiative is the first and most famous example, have been multiplying and their contents expanding. Corresponding with the involvement and endorsement of organizations like UNESCO, OER projects are undertaken with the hope that opening up education has the potential to serve those otherwise beyond the reach of educational services and resources. It is worth noting in this connection that countries like India and Iran already make aggressive use of more established technologies and techniques such as television and post to deliver education to millions of students. Indira Gandhi National Open University of India, for example, hosts 3,500,000 students, and the Islamic Azad University based in Tehran, has 1,500,000 enrolments (List 2011). Naturally, in these institutions, educational functions such as instruction and content development are disaggregated and otherwise rationalized. Sir John Daniel, current president of the Commonwealth of Learning, refers to these as "mega-universities," characterizing them as a model for higher education in the future.

However, opening up education and curricular resources offers more than just the possibility of sharing and adapting course materials and other contents. As a UNESCO-sponsored website on OER observes, the "opening up" of instruction also "provide[s] a strategic opportunity to improve the quality of education as well as facilitate policy dialogue, knowledge sharing and capacity building" (UNESCO 2011, n.p.). It is these broader possibilities that this paper emphasizes, and it is with the intention of facilitating dialogue related to policy that these possibilities are offered and explored here. In this paper, significant reference is made to Thompson Rivers University (TRU) of Kamloops, Canada, which has recently joined OERu as a founding member (OER university 2011). As a result, this paper is also written with an interest in communicating some of the positive potential of this initiative. But it is just as important that these efforts and the thinking behind them be presented in a manner that invites scrutiny and even critique: To do otherwise in an initiative premised on openness would be self-contradictory and self-defeating.

The mission of Thompson Rivers University (TRU) Open Learning (OL) is understood in terms of the interrelation of three entities: the student, the faculty member and the curriculum content. Where they interconnect—with a TRU-OL student working with TRU-OL courseware, being supported by a TRU-OL faculty member—is where learning, assessment and ultimately, credentialing take place. These three elements can be interrelated as points in a triangle, with assessment and credentialing in the centre. However, given the "open" content and services envisioned by the OER (Open Educational Resource) university and other initiatives, TRU-OL is currently exploring the results of defining these three elements differently. Instead of designating TRU-OL students, TRU-OL teachers and TRU-OL contents, specifically, these elements can serve as *placeholders* for *any* students, *any* instructional personnel or supports, and *any* open content. These can, in theory, all be shared, opened and disaggregated among various institutions, while assessment and credentialing remain as the principal service offered locally. The purpose of this paper is to explain this model in the context of the "open educational" movement, to describe its various permutations, and to consider the questions and objections that may arise in relation to it. It is thus intended to inform and invite discussion concerning a new set of "open" educational possibilities.

The OER Foundation and OERu

Open Educational Resource university describes itself as "an international innovation partnership of accredited universities, colleges and polytechnics coordinated by the OER Foundation, an independent educational charity." The OER Foundation, working from Dunedin New Zealand, is affiliated with the aforementioned "Commonwealth of Learning," which encourages open and distance education across the (formerly British) Commonwealth of Nations. The OERu network of institutions includes Athabasca University, BC Campus and Thompson Rivers University in Canada, Empire State College and Southern New Hampshire University in the United States and the universities of South Africa, Southern Queensland, Wollongong, Canterbury and six other institutions worldwide. As the OER Foundation describes,

> The OERu is nurturing the development of a sustainable and scalable OER ecosystem for the formal sector. ..learners [not otherwise able to access educational opportunities] may choose to enrol at formal education institutions in the traditional way or participate in free learning provided through the OERu network. The OER university network will facilitate pathways for OER learners to gain credible credentials from participating institutions who will be formally accredited institutions in their national jurisdictions. (OERu 2011, n.p.)

In an important sense, open educational resources open up the classroom and unlock the password protected confines of Moodle and Blackboard courses. When these "unlocked" syllabi and curricular materials become part of "a sustainable and scalable OER ecosystem," they are no longer associated with an institution, an instructor or professor or a personal collection of PowerPoint files and course handouts stored on a local hard drive. Opened up in this way, these materials can be used for self study (one of the larger uses of MIT materials has been for self study by Chinese learners –after these materials have been adapted, translated, for reuse in Mandarin [MIT OCW 2005]).

One could go further, though, in opening up curricular content and educational practices. Other instructors can use open content; existing courses could be supported by teaching assistants and tutors who did not play a role in its development. This is a kind of "disaggregation" of instructional role and content is already commonplace in universities and distance education institutions; and the OER Foundation has even suggested that this instructional support could be undertaken, at least in part, through cadres of volunteers –groups which have already worked very effectively in the associated WikiEducator project. Assessment and accreditation, finally, also do not need to be confined to the same four classroom walls where teaching and study earlier took place – whether these classroom walls are real or virtual (i.e. in a Moodle or Blackboard course).

The Student-Teacher-Content Triangle

Traditionally, indeed for hundreds of years (Hopmann, 1999), triangular figures interconnecting student, teacher and content, have appeared and reappeared, been modified and extended in the literature of education. In its traditional form, this figure is configured very simply: The student engages with both curricular content and teacher, while the teacher has the opportunity to design, present, illustrate and support the educational content. In this form, this figure is known as the instructional triangle, or the didactic triangle (in which didactic refers to effective rather than moralizing or reductive methods of teaching).

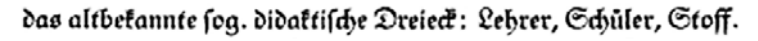

Figure 1 "the old, familiar, so-called didactic triangle: teacher, pupil, material (Petersen, 1937, p. 32)

In the literature of distance education, the didactic triangle has been taken up and elaborated upon in order to describe new educational configurations. It has also been associated with a vocabulary germane to remote and technologically-mediated environments, with teacher, student and content seen as interrelated via their "interactions." When connected in this way, it is possible to derive three types of interaction from this triangle: student-teacher, student-content, and teacher-content interaction.[1] Treating each type of interaction individually

[1] It is important to note the contribution of Michael G. Moore to this discussion. In 1989, Moore proposed a modified triad (but not a strict triangle) of interactive forms, by dropping teacher-content interaction and substituting for it interaction among students or learners. Moore presciently observed that it "is inter-learner interaction, between one learner and other learners,

has enabled distance educators to explore and categorize the potential and drawbacks of various technologies and course design options. Understanding these three types of interaction –and particularly student interactions with content and teacher-- as elements that can be integrated or "mixed" in varying degrees in a course design, the question has then been asked: How can we "Get the Mix(ture) Right?" The answer has varied: In the days of correspondence education, Daniel and Marquis made "the case for the [careful] mixture of ...activities in which the student works alone and those which bring him into contact with others" (1979). Later Anderson hypothesized that "deep and meaningful formal learning is supported as long as one of the three forms of interaction (student–teacher; student-student; student-content) is at a high level" (2003, n.p.) These forms of interaction, in other words, are posited by Anderson as being ultimately interchangeable.

In this same time-period Garrison, writing with Anderson, outlined a new variation of the didactic triangle. Their principle modification consists of adding three further types of interaction by positing each component --student, teacher and content-- as capable of interacting with itself. Students and teachers are seen as communicating in formal and informal forums and contexts, and content components are envisioned as being artificially intelligent, as adjusting automatically to form learning sequences according to learner needs. Finally, in the middle of the figure the central goal or outcome of these interactive forms is stated, which is "deep and meaningful learning."

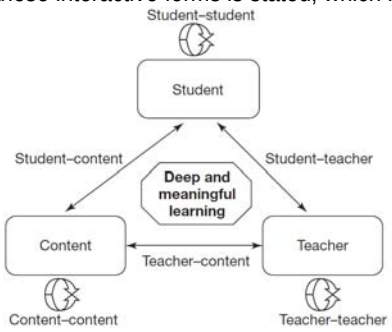

Figure 2 "Modes of Interaction" from Garrison & Anderson, 2003, p. 43.

Significantly, it is possible to go a step further in modifying this triangular combination of student-teacher-content specifically as suggested by open content and open practices. To do so, it is first useful to think of the triangle as describing instructors, students and content as grouped together in a single, specific course or institution. To indicate this, students, teachers and content can be labelled in the diagram as "local," in the sense of these all being registered, employed and developed or licensed by a given institution. (Note: It is institutional affiliation rather than literal location that is thus intended by the term "local.") In keeping with this emphasis, the desired learning or assessed outcomes and credentials found at the centre of the triangle can also be identified with the local institution, resulting in a configuration such as figure 3:

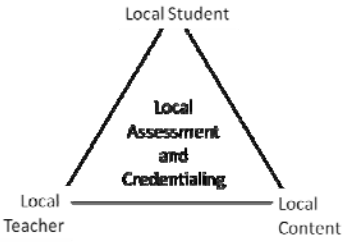

Figure 3: "Open Learning 1.0" with local students, contents and teachers

Such a model describes what happens in conventional universities and distance education institutions, where the institution's students are taught by its own faculty or instructional personnel, using contents licensed or developed by same institution or faculty member. It can consequently be characterized as the "original" version of open or distance education, as "Open Learning 1.0."

The first permutation in this diagram accounts for the introduction and the active reuse and redistribution of open educational resources or courseware. Instead of local content, the content can be labelled as "open" or "any:" It

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alone or in group settings, with or without the real-time presence of an instructor... that will be a challenge to our thinking and practice in the 1990s."

can have its origin at any institution or other source (e.g. a Wiki project), not just the one associated with the local students, teachers and credentialing.

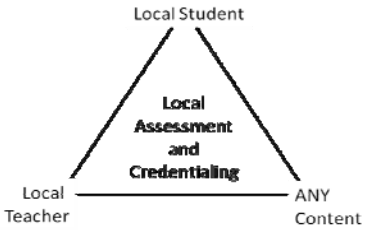

Figure 4: Model showing OER or OCW reuse ("any content")

A further change can be made to indicate the introduction of other open practices, specifically of the kind enacted in moocs, massive open online courses. (An example of a mooc that has garnered considerable attention recently is Stanford's introduction to Artificial Intelligence, a course for which 58,000 students from around the globe registered [Markoff, 2011].) In a case such as this, it is not only the content that is opened, but also, in a sense, the student or learner: He or she no longer has to be registered specifically with the institution offering the credential and employing the instructor. The student can instead be an independent learner or from a different institution. Assuming some flexibility in granting of credits –flexibility which has already been realized in the case of at least one mooc (mooc, 2011)— the assessment and credit the students receive need not also be from this same instit ution offering the instruction.

The final stage is that the teacher would also be "opened" or disaggregated. As already indicated above, it is the intention of the OERu network to experiment with the disaggregation of teaching functions in order to allow teams of volunteers or possible also student peers to support and engage with learners who would not otherwise be able to access such support in traditional contexts. (Note that institutions like the Open University of the UK are experimenting with models of peer support, and these models are being used as the basis for commercial services, such as http://openstudy.com.)

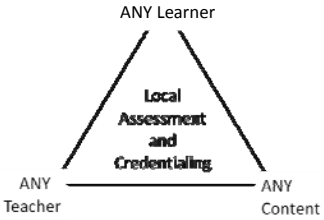

Figure 5: Model of "Open Learning 2.0:" any student, content or teacher

This then is what can be envisioned as "Open Learning 2.0:" a model in which the basic elements of education, traditionally conceived, are redefined as placeholders and are opened up to substitution and disaggregation. Any student can study any content, supported in any number of instructional arrangements. It is important to note that in this third version of this diagram, as in the previous two, the contents at the centre of the triangle remain the same: "local assessment and credentialing." The "local" institutional evaluation and accreditation are envisioned as remaining at the centre of the model, with the student receiving a local assessment, in order to receive a local credit, which can then be applied towards a locally-granted certificate, diploma or degree. Even though learning is achieved through flexible arrangements, it can in this sense still be rigorously assessed and credentialed.

Questions, Objections and other Responses

Of course, it is one thing to simply conceptualize possibilities with terms like "openness" and to present a diagram abstractly configuring possible relationships between student, teacher and content. It is quite another to identify and engage with some of the probable "real-world" consequences of such reconfigurations. But given the efforts already underway to open up various aspects of education, it is important to initiate and invite this discussion and to openly address questions and issues that these efforts raise. The items numbered below, presenting questions and possible responses, are provided only as a starting point:

1. Is this description of the disaggregation of institutional and teacher functions simply another attempt at de-skilling and outsourcing? The answer apparent from OERu's documentation is "no." They say that the

disaggregation of institutional and instructional functions is not intended for situations in which these are highly integrated and personalized in the student experience –for "traditional" university situations, in other words. Instead, OERu envisions this disaggregation and "substitutability" of student, content and teacher as being a part of a "parallel universe" of education as mentioned above: one inhabited by students who are not privileged to attend "integrated and personalized" institutions familiar in OECD countries.

2. Is this "parallel universe" envisioned for some students and contexts not also ultimately seen as becoming our own? Again, the answer apparent from OERu's documentation is "no." The existence of this "parallel universe" is described as dependent on the continued health and success of the "traditional" university, since these institutions are the ones that supply the content and other resources that make a network like the OERu possible. Also, this traditional university model, as it has developed first in Europe and later in wealthy nations around the world, is seen by the same nations as integral to their continued prosperity.
3. Will the quality of education or learning made available to students through this model (compared to integrated forms) be adversely affected through this disaggregation and distribution of responsibilities? OERu does not address this question directly. However, at the same time, it seems that the answer to this question would have to be "that this is yet to be determined," whether the answer comes from OERu or elsewhere. There are those who will believe that quality comes with privilege: More direct contact with faculty, increased integration of teaching and research, and the opportunity to cultivate peer relationships, inside class and outside, are all part of a privileged, high-quality educational experience. At the same time, exposing courses to the scrutiny of students, peers and the public in general are almost certain to help improve rather than degrade the quality of their contents. In this connection, it is important to note that UNESCO is currently supporting the work of OERu specifically because of this network's potential contribution to educational quality: UNESCO sees the opening up of educational contents and processes as a necessary precondition to comparing and evaluating the quality of different educational systems and programs.
4. If I give away my curricular materials, am I not also in danger of giving up my (and others') livelihood as a teacher or faculty member? The answer, evident from many quarters, is "no." This question was a burning issue when MIT opened up its courses online, and the results of MIT's experiment provide much to support an unequivocal "no" as an answer. The value that is added in a high-quality education, such as MIT provides, is not to be found in the materials used by faculty and instructors in the classroom. The value of these materials is realized in a context constituted by myriad other elements that are part of a privileged educational experience, whether it is found at MIT or elsewhere.

Whether the vision of "Open Learning 2.0" described above will be fully realized (as indicated in figure 5), or whether it is only partially realized as schematized in other diagrams, is of course completely open to question. What is clear, however, is that versions of what is suggested in these diagrams are already becoming manifest – albeit in formal or limited "pilot" contexts. These manifestations have taken the form of open courseware that is modified and reused elsewhere (as illustrated by the MIT example), of experimental moocs (such as that recently offered at Stanford University), or of peer or other instructional support arrangements (such as those facilitated by the UK's Open University). The freedom to experiment, however, should not be limited to the MITs, OUs and Stanfords of the world, but should certainly be an option for others as well.

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