

Connectivism Defined

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What Connectivism Is

At its heart, connectivism is the thesis that knowledge is distributed across a network of connections, and therefore that learning consists of the ability to construct and traverse those networks.

It shares with some other theories a core proposition, that knowledge is not acquired as though it were a thing. Hence people see a relation between connectivism and constructivism or active learning (to name a couple).

Where connectivism differs from those theories, I would argue, is that connectivism denies that knowledge is propositional. That is to say, these other theories are 'cognitivist', in the sense that they depict knowledge and learning as being grounded in language and logic.

Connectivism is, by contrast, 'connectionist'. Knowledge is, on this theory, literally the set of connections formed by actions and experience. It may consist in part of linguistic structures, but it is not essentially based in linguistic structures, and the properties and constraints of linguistic structures are not the properties and constraints of connectivism or connectivist knowledge.

In connectivism, a phrase like 'constructing meaning' makes no sense. Connections form naturally, through a process of association, and are not 'constructed' through some sort of intentional action. And 'meaning' is a property of language and logic, connoting referential and representational properties of physical symbol systems. Such systems are epiphenomena of (some) networks, and not descriptive of or essential to these networks.

Hence, in connectivism, there is no real concept of transferring knowledge, making knowledge, or building knowledge. Rather, the activities we undertake when we conduct practices in order to learn are more like growing or developing ourselves and our society in certain (connected) ways.

This implies a pedagogy that (a) seeks to describe 'successful' networks (as identified by their properties, which I have characterized as diversity, autonomy, openness, and connectivity) and

(b) seeks to describe the practices that lead to such networks, both in the individual and in society (which I have characterized as modeling and demonstration (on the part of a teacher) and practice and reflection (on the part of a learner)).

What Connectivism Is Not

There are some arguments that argue, essentially, that the model we are demonstrating here would not work in a traditional academic environment. These arguments, it seems to me, are circular. They

defend the current practice by the current practice.

Yes, we know that in schools and universities students are led through a formalized and designed instructional process. We understand that some students prefer it that way, that some academics are more comfortable with the format, that most institutions require the practice.

But none of this proves that the current practice is **better** than what is being described and demonstrated here. Our argument is that connectivism is at least as well justified and well reasoned as current practice, and the practice shows that it works.

Right now we are engaged in the process of defining what connectivism is. Perhaps it may be relevant for a moment to say what it is not.

George Siemens offers a useful chart comparing Connectivism with some other theories. From this, we can see that, according to connectivism:

- learning occurs as a distributed process in a network, based on recognizing and interpreting patterns
- the learning process is influenced by the diversity of the network, strength of the ties
- memory consists of adaptive patterns of connectivity representative of current state
- transfer occurs through a process of connecting
- best for complex learning, learning in rapidly changing domains

Now I would add to or clarify each of these points. For example, I would say that the learning process is influenced by the four elements of the semantic condition (diversity, autonomy, openness, connectedness), that while memory is adaptive, it is not (necessarily) representative, and that learning, on this theory, isn't 'transferred', but grown anew by each learner.

But despite these clarifications, we can see pretty easily from this description what connectivism is not (and, more importantly, what it is not intended to be):

- learning is not structured, controlled or processed. Learning is not produced (solely or reliably) through some set of pedagogical, behavioral, or cognitive
- learners are not managed through some sort of motivating process, and the amount of learning is not (solely or reliably) influenced by motivating behaviours (such as reward and punishment, say, or social engagement)
- learners do not form memories through the storage of 'facts' or other propositional entities, and learning is not (solely or reliably) composed of mechanisms of 'remembering' or storing such facts
- learners do not 'acquire' or 'receive' knowledge; learning is not a process of 'transfer' at all, much less a transfer than can be caused or created by a single identifiable donor
- learning is not the acquisition of simple and durable 'truths'; learners are expected to be able to manage complex and rapidly changing environment

The reason I take some pains here to describe what connectivism is not is that it should now be clear that none of these constitutes an argument against connectivism.

In one critique, for example, we read "I think this open ended process can lead to some educational chaos and we need to be careful of that." (Kashan) The connectivist approach can pretty reliably lead to chaos. But this is because we believe that learning it is not structured, controlled or processed.

And we expect students to be able to manage complex and rapidly changing environment - in other words, to be able to manage through just the sort of chaos we are creating.

Saying that it "can lead to some educational chaos" is therefore not a criticism of connectivism.

To be sure, educational chaos does not work well in traditional learning and existing academic institutions. So much the worse (we say) for traditional learning and existing academic institutions.

One might ask, then, what we expect traditional learning and existing academic institutions to look like in a connectivist world.

There is no reason for the *delivery* of instruction (whatever form it may take) to be conjoined with the more formal and institutionally-based *assessment* of instruction. Which means that we can offer an open, potentially chaotic, potentially diverse, approach to learning, and at the same time employ such a process to support learning in traditional institutions.

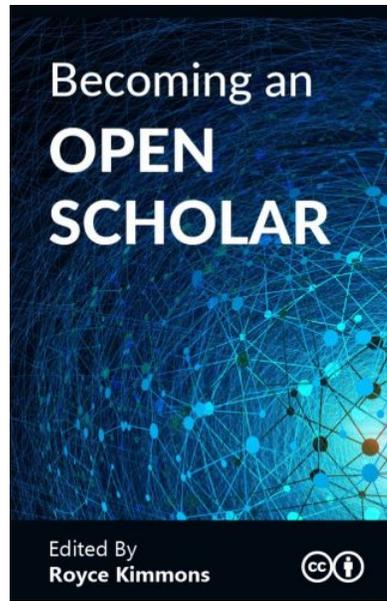
As George has said, we are doing for the delivery of instruction what MIT OpenCourseWare has done for content. We have opened it up and made it something that is not only not institutionally bound, but something that is, to a large degree, created and owned by the learners engaged in this instructional process.

There is nothing in traditional institutions - except, perhaps, policy - that prevents this model from working. The criticisms of this model that are based on pragmatics and practicality are not sound. They achieve their effectiveness only by assuming what they seek to prove.

Engagement with, and opposition to, the process described by connectivism will have to take place at a deeper level. Critics will need to show why a linear, orderly process is the only way to learn, to show why learners should be compelled, and then motivated, to follow a particular program of studies.

We are prepared to engage in such discussions.

But a discussion rooted in the traditional institution must allow and acknowledge that connectivism, if adopted, would change existing institutions, and to base its reasoning in the desirability or the effectiveness of such changes, and not merely the fact that they haven't happened yet.



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