

~~Investigating~~ the effects of computer-generated contextual landmarks on short-term recall of e-texts

An interrupted journey



Jon Dron, Rory McGreal, Vive Kumar, Jennifer Davis

So I had a maggot

maggot noun

 Save Word

mag·got | \ 'ma-gət  \

Definition of *maggot*

- 1 : a soft-bodied legless grub that is the larva of a dipterous insect (such as the housefly)
- 2 : a fantastic or eccentric idea : [WHIM](#)





<https://flic.kr/p/2hydzcq>

The best laid plans...

Athabasca University's IDEA lab

- Cloud-based virtual research domain using AWS and Ronin
- IDEA Academy - a pool of (student) RAs trained to use AWS and Ronin tools and to assist in research

IDEA Lab

As a leader in open and online education, AU is transforming the future of digital-first university research through its Lab.

What is IDEA Lab?

IDEA Lab is a cloud-based virtual research domain developed in partnership with [Amazon Web Services \(AWS\)](#) and [RONIN](#). IDI is a highly collaborative venture between AU's [Research Office](#) and the Cloud Research Architecture team in IT.

IDEA Lab accelerates innovation, discovery, and creation by providing streamlined access to digital tools and collaborative consultation throughout the process of ideation, development, and mobilization of research.

Crafting digital-first research solutions to real world problems

Connected to IDEA Lab is [IDEA Academy](#)—through [IDEA Academy](#), Research Assistants are recruited and trained on cloud technologies and tools in a sector leading approach to research and work integrated learning. This forward-thinking training enables Research Assistants to support, advance, and contribute to projects developed and supervised by AU faculty researchers.

We got some money to make use of AWS/Ronin, and we got a few hours of RA time a week for a few months

What we plan(ned) to do

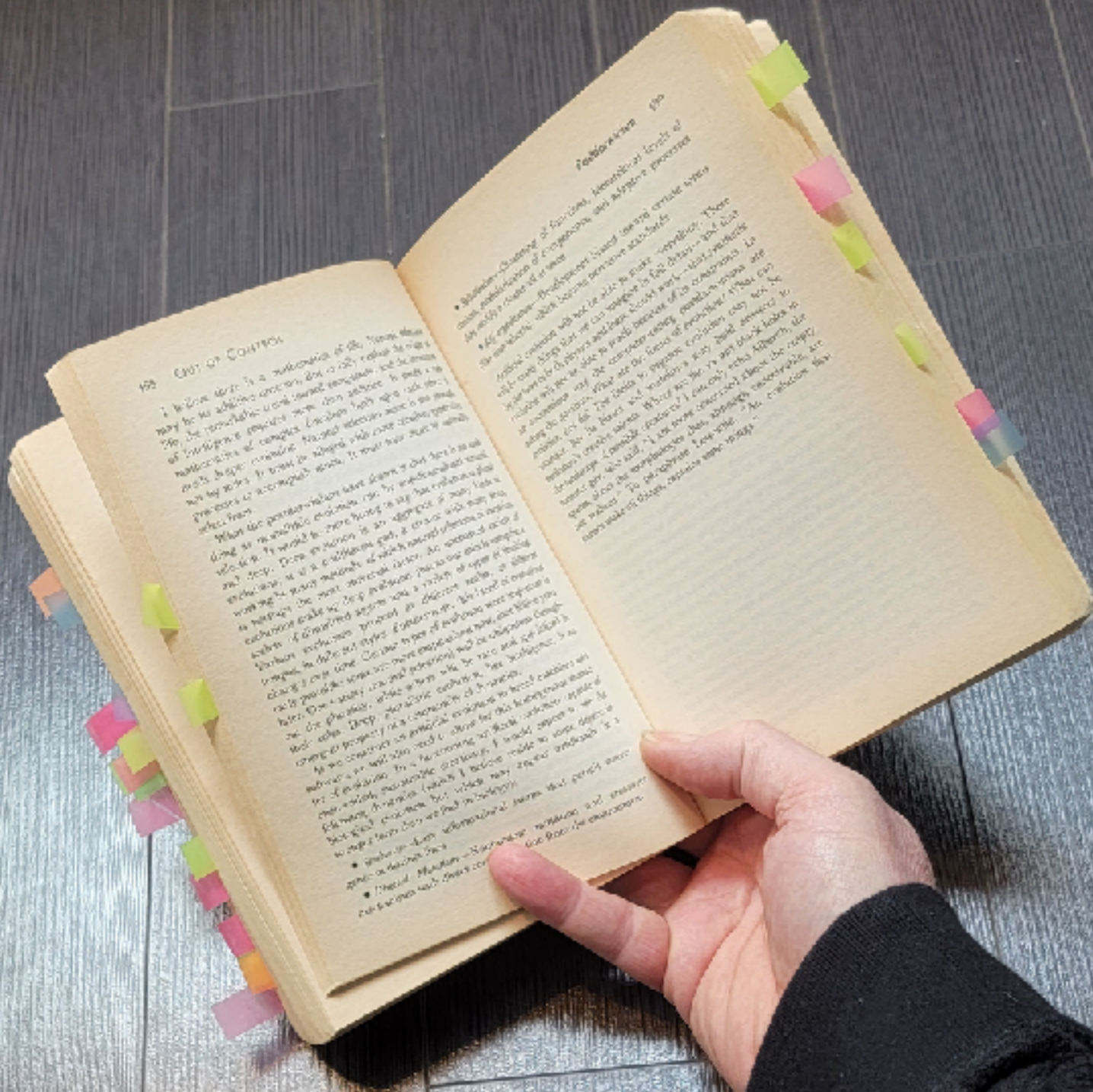
**Make etexts easier to
recall**

etexts are great.

remixable **shareable**
robust **non-rival** **replicable**
accessible
cheap
sustainable **editable**
flexible **annotatable** **translatable**

But they could be greater...

**But contents of etexts
may be harder to recall**



Nature is chock-a-block with coevolution. Every green corner sports parasites, symbionts, and tightly coupled dances. Biologist P. W. Price estimated that over 50 percent of today's species are parasitic. (The figure has risen from the deep paleologic past and is expected to keep rising.) Here's news: half of the living world is codependent! Business consultants commonly warn their clients against becoming a symbiotic company dependent upon a single customer company, or a single supplier. But many do, and as far as I can tell, live profitable lives, no shorter on average than other companies. The surge of alliance-making in the 1990s among large corporations—particularly among those in the information and network industries—is another facet of an increasing coevolutionary economic world. Rather than eat or compete with a competitor, the two form an alliance—a symbiosis.

The parties in a symbiosis don't have to be symmetrical or even at parity. In fact, biologists have found that almost all symbiotic alliances in nature entail a greater advantage for one party—in effect some hint of parasitism—in every codependency. But even though one side gains at the expense of the other, both sides gain: over all, and so the pact continues.

In his magazine *CoEvolution Quarterly* Brand began collecting stories of coevolutionary games. One of the most illustrative examples of alliance making in nature is the following:

In eastern Mexico live a variety of acacia shrubs and marauding ants. Most acacias have thorns, bitter leaves, and other protection against a hungry world. One, the "swollen thorn acacia," learned to encourage a species of ant to monopolize it as a food source and kill or run off all other predators. Enticements gradually included nice water-proof swollen thorns to live in, handy nectar fountains, and special ant-food buds at the leaf tips. The ants, whose interests increasingly coincided with the acacias, learned to inhabit the thorns, patrol the acacia day and night, attack every acacia-hungry organism, and even prune away invading plants such as vines and tree seedlings that might shade Mother Acacia. The acacia gave up its bitter leaves, sharp thorns, and other devices and now requires the acacia-ant for survival. And the ant colonies can no longer live without the acacia. Together they're unbeat-able.

Visual landmarks

**Hints that virtual
landmarks might
improve recall**

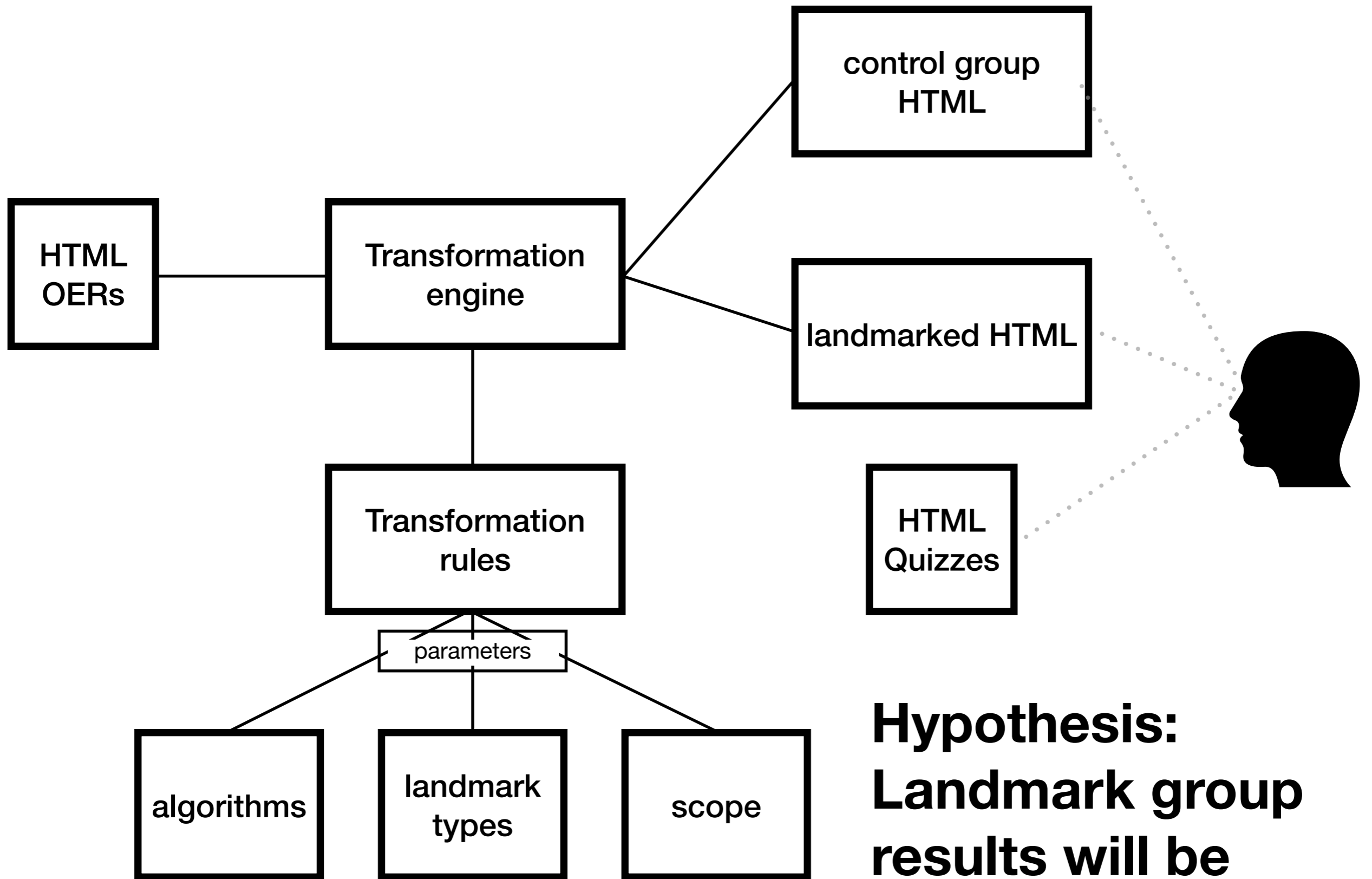
Confounding factors, e.g.

- the text itself;
- the topic;
- the intent;
- the reader;
- the device;
- the (possible) benefits of poor legibility.

What we are trying to do

Methodology

- **Low threshold, anonymous participation (no logins, no interruptions)**
- **Some readers get landmarks**
- **Some readers get consistent patterns**
- **We test recall using a simple MCQ**
- **We capture what we can easily capture (navigation, time on task, device, etc)**



**Hypothesis:
Landmark group
results will be
better than for the
control group**

**some prototype
examples**


Many of us who work with Open Pedagogy today have come into the Resources (OERs). OERs are educational materials that are openly-licensed. [Opencontent.org, http://opencontent.org/definition/](http://opencontent.org/definition/): they can be reused. When OERs began to re-emerge, this time crucially inflected with the same “open”

In this way, we can think about Open Pedagogy as a term that is connected to Open Education, yes, but also Open Access, Open Science, Open Data, Open Access. Open Access focused scholars who articulated how the use of OERs could transform education. [/blog/archives/2975](http://opencontent.org/blog/archives/2975), that “actually suck value out of the world,” and I think we need to build knowledge commons, not just consume from it, in meaningful and lasting ways. [2017, https://opencontent.org/blog/archives/5009](https://opencontent.org/blog/archives/5009), with an explicit call to


As Wiley has focused on students-as-contributors and the role of OERs, [at the Heart of the Institution,](http://opencontent.org/blog/archives/5009) [hapgood, Mike Caulfield's professional](http://opencontent.org/blog/archives/5009) [the backseat ready to hop over into the front. Caulfield sees the replacement of wikis, etc.”](http://opencontent.org/blog/archives/5009) We might delve in a bit deeper here. Beyond participating

First, we want to recognize that Open Pedagogy shares common intellectual and pedagogical strands that overlap with Open Pedagogy. From constructivist learning, a valuing of experiential and learner-centered inquiry, and a focus on [Learning Research Hub, https://dmlhub.net/](https://dmlhub.net/), we recognize a hope that [“Critical Digital Pedagogy: A Definition,” Digital Pedagogy Lab, No. 1](https://dmlhub.net/) educational philosophy espoused by scholars such as Paulo Freire and


If we merge OER advocacy with the kinds of pedagogical approaches that have been used as a guiding praxis. To do this, we need to link these pedagogical investments to <http://www.un.org/en/universal-declaration-human-rights/>, asserts that [Rab, Paying the Price: College Costs, Financial Aid and the Betrayal of the Public Good](http://www.un.org/en/universal-declaration-human-rights/) and college enrollment, attendance, persistence, and completion. But [67% of college students in Florida and 54% of those in British Columbia](http://www.un.org/en/universal-declaration-human-rights/) [Review of Research in Open and Distributed Learning 18, no 4 \(2017\)](http://www.un.org/en/universal-declaration-human-rights/) unaffordability. This is precisely why the push to reduce the high cost of higher education and the unaffordability of a college degree.




Many of us who work with Open Pedagogy today have come into the conversation through Open Educational Resources (OERs). OERs are educational materials that are openly-licensed, usually under Creative Commons licenses, and are available on [Opencontent.org](http://opencontent.org), <http://opencontent.org/definition/>: they can be reused, retained, and modified. As OERs began to re-emerge, this time crucially inflected with the same “open” that inflected




In this way, we can think about Open Pedagogy as a term that is connected to many other movements in Education, yes, but also Open Access, Open Science, Open Data, Open Source, and Open Access. It is the work of focused scholars who articulated how the use of OERs could transform pedagogy. See [/blog/archives/2975](#), that “actually suck value out of the world,” and he postulates that we should create knowledge commons, not just consume from it, in meaningful and lasting ways. See [2017, https://opencontent.org/blog/archives/5009](https://opencontent.org/blog/archives/5009), with an explicit commitment to



As Wiley has focused on students-as-contributors and the role of OERs in education, see [at the Heart of the Institution," hapgood, Mike Caulfield's professional website,](#) and the backseat ready to hop over into the front. Caulfield sees the replacement of textbooks with wikis, etc.” We might delve in a bit deeper here. Beyond participating in the creation



First, we want to recognize that Open Pedagogy shares common investments with other pedagogical strands that overlap with Open Pedagogy. From constructivist pedagogy, experiential learning, a valuing of experiential and learner-centered inquiry, and a democratization of knowledge. See [Learning Research Hub, https://dmlhub.net/](https://dmlhub.net/), we recognize a hope that human collaboration can be a force for good. See ["Critical Digital Pedagogy: A Definition," Digital Pedagogy Lab, Nov. 18, 2014](#), and the educational philosophy espoused by scholars such as Paulo Freire and bell hooks.



If we merge OER advocacy with the kinds of pedagogical approaches that focus on equity and social justice as a guiding praxis. To do this, we need to link these pedagogical investments with the broader goals of the United Nations Declaration on Human Rights, <http://www.un.org/en/universal-declaration-human-rights/>, asserts that “higher education is a right, not a privilege.” See [Rab, Paying the Price: College Costs, Financial Aid and the Betrayal of the American Dream](#), and college enrollment, attendance, persistence, and completion. But for those of us who are not in the 67% of college students in Florida and 54% of those in British Columbia, see [Rajiv S. Mehta, Review of Research in Open and Distributed Learning 18, no 4 \(2017\)](#), cannot afford the high cost of textbooks. This is precisely why the push to reduce the high cost of textbooks is so important for the affordability of a college degree.

Many of us who work with Open Pedagogy today have come into the Resources (OERs). OERs are educational materials that are openly-licensed. [Opencontent.org, http://opencontent.org/definition/](http://opencontent.org/definition/): they can be reused. They began to re-emerge, this time crucially inflected with the same “open”

In this way, we can think about Open Pedagogy as a term that is connected to Open Education, yes, but also Open Access, Open Science, Open Data, Open Access. Open Access focused scholars who articulated how the use of OERs could transform higher education. [/blog/archives/2975](http://opencontent.org/blog/archives/2975). that “actually suck value out of the world,” and build knowledge commons, not just consume from it, in meaningful and lasting ways. [2017, https://opencontent.org/blog/archives/5009](https://opencontent.org/blog/archives/5009). with an explicit cor

As Wiley has focused on students-as-contributors and the role of OERs, [at the Heart of the Institution," hapgood, Mike Caulfield's professional](http://opencontent.org/blog/archives/5009) the backseat ready to hop over into the front. Caulfield sees the replacement of wikis, etc.” We might delve in a bit deeper here. Beyond participating

First, we want to recognize that Open Pedagogy shares common intellectual and pedagogical strands that overlap with Open Pedagogy. From constructivist learning, a valuing of experiential and learner-centered inquiry, and a focus on [Learning Research Hub, https://dmlhub.net/](https://dmlhub.net/). we recognize a hope that ["Critical Digital Pedagogy: A Definition," Digital Pedagogy Lab, November 2017](http://opencontent.org/blog/archives/5009) educational philosophy espoused by scholars such as Paulo Freire and

If we merge OER advocacy with the kinds of pedagogical approaches that have been used as a guiding praxis. To do this, we need to link these pedagogical investments to the <http://www.un.org/en/universal-declaration-human-rights/>. asserts that [Rab, Paying the Price: College Costs, Financial Aid and the Betrayal of the Student](http://opencontent.org/blog/archives/5009) and college enrollment, attendance, persistence, and completion. But [67% of college students in Florida and 54% of those in British Columbia](http://opencontent.org/blog/archives/5009) [Review of Research in Open and Distributed Learning 18, no 4 \(2017\)](http://opencontent.org/blog/archives/5009) unaffordability. This is precisely why the push to reduce the high cost of higher education and the unaffordability of a college degree.

Many of us who work with Open Pedagogy today have come into the world through Open Educational Resources (OERs). OERs are educational materials that are openly licensed. [Opencontent.org](http://opencontent.org), <http://opencontent.org/definition/>: they can be reused and modified. Open pedagogy began to re-emerge, this time crucially inflected with the same “open” ethos.

In this way, we can think about Open Pedagogy as a term that is connected to Open Education, yes, but also Open Access, Open Science, Open Data, Open Access, and Open Access focused scholars who articulated how the use of OERs could transform education. [/blog/archives/2975](#). that “actually suck value out of the world,” and knowledge commons, not just consume from it, in meaningful and lasting ways. [2017, https://opencontent.org/blog/archives/5009](https://opencontent.org/blog/archives/5009). with an explicit call to action.

As Wiley has focused on students-as-contributors and the role of OERs in education, [at the Heart of the Institution," hapgood, Mike Caulfield's profession](#) the backseat ready to hop over into the front. Caulfield sees the replacement of traditional education with wikis, etc.” We might delve in a bit deeper here. Beyond participating in the conversation, we need to be active in it.

First, we want to recognize that Open Pedagogy shares common intellectual and pedagogical strands that overlap with Open Pedagogy. From constructivist learning, a valuing of experiential and learner-centered inquiry, and a focus on social learning, [Learning Research Hub, https://dmlhub.net/](https://dmlhub.net/). we recognize a hope that Open Pedagogy is a new form of education. ["Critical Digital Pedagogy: A Definition," Digital Pedagogy Lab, November 2017](#) educational philosophy espoused by scholars such as Paulo Freire and others.

If we merge OER advocacy with the kinds of pedagogical approaches that are being used in education as a guiding praxis. To do this, we need to link these pedagogical interventions to a broader social and economic context. <http://www.un.org/en/universal-declaration-human-rights/>. asserts that education is a human right. [Rab, Paying the Price: College Costs, Financial Aid and the Betrayal of the American Dream](#) and college enrollment, attendance, persistence, and completion. But [67% of college students in Florida and 54% of those in British Columbia](#) [Review of Research in Open and Distributed Learning 18, no 4 \(2017\)](#) unaffordability. This is precisely why the push to reduce the high costs of education and increase the affordability of a college degree.

Many of us who work with Open Pedagogy today have come into the field through Open Educational Resources (OERs). OERs are educational materials that are openly licensed. [Opencontent.org](http://opencontent.org/definition/), <http://opencontent.org/definition/>: they can be reused and repurposed. As OERs began to re-emerge, this time crucially inflected with the same “open”

In this way, we can think about Open Pedagogy as a term that is connected to Open Education, yes, but also Open Access, Open Science, Open Data, Open Access, and Open Access focused scholars who articulated how the use of OERs could transform education. </blog/archives/2975>, that “actually suck value out of the world,” and Open Access knowledge commons, not just consume from it, in meaningful and lasting ways. [2017, https://opencontent.org/blog/archives/5009](https://opencontent.org/blog/archives/5009), with an explicit call to

As Wiley has focused on students-as-contributors and the role of OERs, [at the Heart of the Institution," hapgood, Mike Caulfield's professional development](#) the backseat ready to hop over into the front. Caulfield sees the replacement of wikis, etc.” We might delve in a bit deeper here. Beyond participating

First, we want to recognize that Open Pedagogy shares common intellectual and pedagogical strands that overlap with Open Pedagogy. From constructivist learning, a valuing of experiential and learner-centered inquiry, and a [Learning Research Hub, https://dmlhub.net/](https://dmlhub.net/), we recognize a hope that ["Critical Digital Pedagogy: A Definition," Digital Pedagogy Lab, November 2017](#) educational philosophy espoused by scholars such as Paulo Freire and

If we merge OER advocacy with the kinds of pedagogical approaches that support learning as a guiding praxis. To do this, we need to link these pedagogical interventions to <http://www.un.org/en/universal-declaration-human-rights/>, asserts that [Rab, Paying the Price: College Costs, Financial Aid and the Betrayal of the American Dream](#) and college enrollment, attendance, persistence, and completion. But [67% of college students in Florida and 54% of those in British Columbia](#) [Review of Research in Open and Distributed Learning 18, no 4 \(2017\)](#) unaffordability. This is precisely why the push to reduce the high cost of education is a key to the affordability of a college degree.

Many of us who work with Open Pedagogy today have come into the Resources (OERs). OERs are educational materials that are openly-licensed. [Opencontent.org, http://opencontent.org/definition/](http://opencontent.org/definition/): they can be reused. When OERs began to re-emerge, this time crucially inflected with the same “open”

In this way, we can think about Open Pedagogy as a term that is connected to Open Education, yes, but also Open Access, Open Science, Open Data, Open Access. Open Access focused scholars who articulated how the use of OERs could transform education. [/blog/archives/2975](http://opencontent.org/blog/archives/2975), that “actually suck value out of the world,” and Open Access knowledge commons, not just consume from it, in meaningful and lasting ways. [2017, https://opencontent.org/blog/archives/5009](https://opencontent.org/blog/archives/5009), with an explicit connection to

As Wiley has focused on students-as-contributors and the role of OERs, [at the Heart of the Institution,](http://opencontent.org/blog/archives/5009) [hapgood, Mike Caulfield's professional](http://opencontent.org/blog/archives/5009) [the backseat ready to hop over into the front.](http://opencontent.org/blog/archives/5009) Caulfield sees the replacement of wikis, etc.” We might delve in a bit deeper here. Beyond participating

First, we want to recognize that Open Pedagogy shares common intellectual and pedagogical strands that overlap with Open Pedagogy. From constructivist learning, a valuing of experiential and learner-centered inquiry, and a focus on [Learning Research Hub, https://dmlhub.net/](https://dmlhub.net/), we recognize a hope that ["Critical Digital Pedagogy: A Definition," Digital Pedagogy Lab, November 2017](https://dmlhub.net/) educational philosophy espoused by scholars such as Paulo Freire and

If we merge OER advocacy with the kinds of pedagogical approaches that have been used as a guiding praxis. To do this, we need to link these pedagogical investments to <http://www.un.org/en/universal-declaration-human-rights/>, asserts that [Rab, Paying the Price: College Costs, Financial Aid and the Betrayal of the American Dream](http://www.un.org/en/universal-declaration-human-rights/) and college enrollment, attendance, persistence, and completion. But [67% of college students in Florida and 54% of those in British Columbia](http://www.un.org/en/universal-declaration-human-rights/) [Review of Research in Open and Distributed Learning 18, no 4 \(2017\)](http://www.un.org/en/universal-declaration-human-rights/) unaffordability. This is precisely why the push to reduce the high cost of higher education and the unaffordability of a college degree.

What we *actually* did

Well, there *were* some positive outcomes...

We all learned a few things about AWS and Ronin (notably, that they are not what we need)

Jennifer learned a lot

**We have the beginnings of a great app
(<https://github.com/jendav/Landmarks>)**

Next steps

Get it working.

And then...

**Different landmarks:
glyphs, skeumorphic cues,
audible cues, etc**

**More revealing studies:
Observational studies, controlled
experiments, interviews, long-term recall,
etc**

**Different electronic formats:
PDF, ePub, Mobi, etc**

New open book by Jon Dron, coming soon-ish from AU Press:
How Education Works: Teaching, Technology, and Technique

Thank you, merci

Jon Dron
<https://jondron.ca/>
jond@athabascau.ca
@jondron