

Unshackling Future Minds: How Including Openness in Teacher Education Can Avoid Insurrection and Usher in a New Era of Collaboration

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Abstract: The paper proposes the inclusion of the philosophy of openness into teacher education and considers some of the potential effects on the culture, community, and practice of education and impact on society as a whole that such an inclusion would theoretically include. The paper discusses the nature of openness, the levels of sharing, pushes for collaborative resource use and development, and places education and educators as driving forces in impacting societal change. Benefits and drawbacks of open resources are briefly discussed.

Introduction

Society has historically tasked education with shaping young learners into the leaders and thinkers of tomorrow; regardless of what conflicts, limitations, or bleak outlooks society faces, it has always looked to teachers as the key element in developing a positive future. When faced with war, incurable disease, unspeakable cultural practices, or any of an endless list of pressures placed on the human condition, the long-term solution is most often that we will somehow learn, advance, or develop our way out of it. During the infancy of our modern education system, Dewey pushed that education should help learners shape philosophy into reality (Westbrook, 1999). Parents and educators must impregnate young minds and raise them up immersed in society's dearly held fundamental values. Sharing is core to society building and creates common ground in community-sourced ideas that we are each able to identify ownership with. If there is no sharing, then there is no community.

In education, communities range from micro-communities (some obscure research topics may only attract three or four people on the entire planet) up to macro-communities that consist of every element of learning that humans have to offer (education and learning as a whole). On average the educational communities which most of us encounter likely consist only of a university or perhaps a county district, however we can assume some universality in the goals for every educational community, such as the desire to increase the effectiveness of learning, or to further the body of knowledge.

Like-minded communities often gather under banners of similar beliefs, pooling available resources to achieve joint goals. Achieving synergies in these unions requires the utilization, coordination, and uniting of many tools, efforts, skills, and other resources, as well as communication and agreement on the best uses of these resources-it requires sharing. However, sharing is not always easy to accomplish functionally. A completely free and uninhibited exchange of ideas and resources requires sharing unto the level of openness, and openness is only possible at the community level when the values of sharing and the freedom of information is ingrained in the values of the community and its leaders. Citizens and community leaders learn what is expected of them through participation in the societies' educational systems:

“Begin young to teach the standards that should prevail in public servants, in governmental administration, in national and international business and politics, and show by relating to daily life and known experience the advantages derived from a well-run government. It will then be a logical conclusion that the ends cannot be achieved without the cooperation of every citizen (Eleanor Roosevelt, 1930).”

So, if sharing, openness, and the freedom of information is to be had in society without a revolution to obtain it (e.g., ANONYMOUS revolution: ANONYMOUS, 2010)), or without the introduction of some disruptive policy (e.g. release of sensitive government documents: wikileaks, 2011), or without sole reliance upon innovative uses of technology (e.g. Human Genome Project: Biological Environmental Research Information System (BERIS), 2011)), then we must agree to educate it into our community.

What is Openness?

Openness is not well defined within the literature, yet it is present in many elements of our society. It is a philosophy, a movement, a mindset, and a state of being. It is the overarching philosophy that is drawn from when the term “open” is used to modify content, access, software, or education. A more formal definition will be forthcoming in subsequent papers, however it may be best understood for now by what it enables in a resource. With an open resource, users are able to freely modify content, use existing resources without fear, divide and combine the content in new ways, and redistribute the work, all thanks to the original creator releasing the work under a lesser restrictive intellectual property license (Wiley, 2010).

As evidenced by the success of the openness movement in education alone we see that collaboration on free and open resources will likely play a big part in the future. Open Access Journal publications have shown positive trends in the last two decades (Laakso, M., Welling, P., Bukvova, H., Nyman, L., Bjork, B-C., et. Al., 2011). Linux is used frequently in research schools and school projects as well, and is implemented in projects to enable learning in 3rd world countries (One Laptop Per Child, 2011). We also see an increase in the adoption of open source Learning Management Systems (Moodle, Sakai, etc.) in higher education (Van Rooij, 2010). Open Educational Resources are growing in popularity as well (Atkins, D.E., Brown, J.S., Hammond, A.L., 2007, Butcher, N., 2011).

Creators of open resources enable the openness of products through releasing their information or product under one of a variety of intellectual licenses that allow for sharing (Wiley, 2010). The most popular kinds of these licenses are the GNU General Public License (GPL) for software (Black Duck, 2011), and the various Creative Commons Licenses (Cheliotis, G. 2007). The GPL license primarily applies to software and seeks to prevent interference with the user’s freedoms (GNU, 2011). For intellectual content, the Creative Commons licenses are prominent. These provide the content user with an immediate range of freedoms going from total control of the resource, up to free redistribution for noncommercial purposes of an unchanged product (Creative Commons, 2011). These enable content creators to share their works with the community-at-large by including a predetermined set of permissions. This saves content users the hassle of tracking down the creator and obtaining permission for use of the content in their own unique circumstances as the creator has already defined their terms and conditions (Liang, L. 2004). Oppositely, normal copyright lasts the life of the author/creator plus 70 years (United States Copyright Office, 2011). This means that works released under normal copyright deny users the right to freely distribute, share, modify, or use certain parts of a work outside of fair use guidelines for 70 years after the last author is dead. These distinctions are important to consider when selecting content for use in a classroom.

Merriam-Webster’s online Dictionary provides 19 definitions for the adjective “open.” A selection of these definitions are: “having no enclosing or confining barrier: accessible on all or nearly all sides,” “not taken up with duties or engagements,” “accessible to the influx of new factors (Open, 2011).” These selected definitions speak directly to some of the universal characteristics of openness. These characteristics include reduced barriers to access and use of resources relative to their closed counterparts, the content creator’s selection of freedom granting licenses which sets the permission levels for the work ahead of time, and that supported resources often stay up to date via community sourced edits and changes. This helps ensure that anyone who is interested can access and use current resources in the manner that is acceptable to the content creators.

Openness in Education

We cannot have education without sharing. It is not possible for one to teach another without conveying information. The whole premise of education is for the one(s) who know to disseminate the information to the one(s) who don’t, thus making more who know and fewer who don’t. Traditionally, resources have been finite and not simultaneously usable on a large scale. However, thanks to digital age technology the costs of sharing are drastically reduced. We are now able to provide others with content (books, videos, lectures, etc.) across great distances and without losing the use of it ourselves while it is being shared (unlike a hard copy of a book, for example). This implies that education now has a much wider reach for relatively less cost (Wiley, 2010, Lessig, 2008).

Sharing is in the nature of education, so if teachers are aware of and embrace sharing, then it will be passed along to the learners. Sharing is also essential to humanity. We share in all types of situations. When we need to

solve a problem, one of the first steps is to compare your problem against an analogical problem to search for a solution (Jonassen, 1997). Learning and sharing with others is an inborn societal drive no different than the drive to procreate or establish safe conditions. In fact, sharing can easily be seen as playing a central role in each level of Maslow’s Hierarchy of Needs (Maslow, 1943).

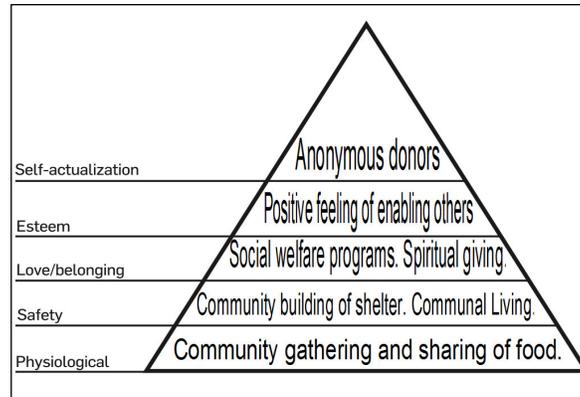


Figure 1. Maslow’s Hierarchy of Needs with examples of sharing. Adapted from image at http://upload.wikimedia.org/wikipedia/commons/6/60/Maslow%27s_Hierarchy_of_Needs.svg

Imagine if we had no education, no desire to share. The scene is certainly ominous; however, sharing unto the point of openness doesn’t come intuitively or easily either. It is natural to feel ownership and want to protect our interests in things that we labor over. Humans form groups that have boundaries and clear lines of exclusion. Sometimes these groups work actively against each other, hiding everything, and sometimes they work together for a greater cause, sharing all that they have. It seems that sharing is on a sliding scale, and it seems that where someone rests on this scale has to do with perspectives, comfort levels, and goals.

The Sliding Scale of Openness

Information is more open when there are fewer restrictions on accessing, changing, repurposing, remixing, and distributing it. Oppositely, information is more closed when it disallows users the right to do these things (Digital Connections Council, 2009). The openness of a resource is enabled by the type of intellectual license that its content is released under, so it follows logically that having an understanding of the various levels of openness provided under each license will house valuable information about the usability (restrictiveness or openness) of a resource. The available intellectual property licenses provide a wide range of openness in the freedoms they offer to users relative to each other. Normal copyright is among the most restrictive of the licenses, while the Creative Commons Licenses increasingly reduce restrictions to allow the resource to become more and more open (Fig.2). The CC Zero (CC0) license (not pictured in the scale below) would be placed rightmost of all these licenses because it enables the creator to waive all rights and neighboring rights to a work, thus effectively placing it in the most open area, the public domain (creative commons-public domain, 2011).

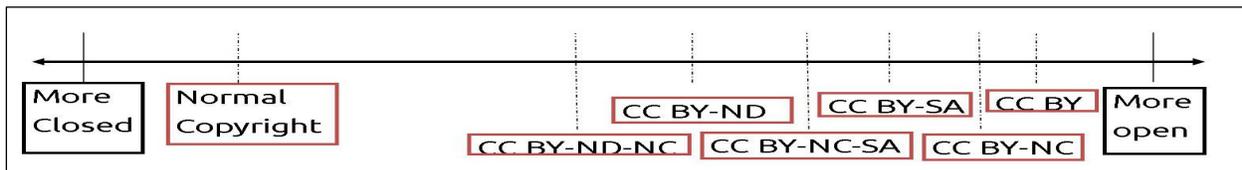


Figure 2. Scale of Openness with Creative Commons Licenses and Normal Copyright Distributed by the Freedoms Enabled by Each License. License types obtained from <http://creativecommons.org/licenses/>

Benefits of Openness

Education's ultimate goal is to enable a future society that is capable of assessing the problems that it faces, evaluating relevant information and resources, and using the results in innovative ways to solve its problems. I believe that in the future this will require the ability to freely use openly available resources, to build on the works of others, and democratically and collaboratively design, develop, and implement solutions to problems, among other skills. Openness is a tool that can help realize this goal. Open ideas, information, and resources carry benefits (such as access, or permissions to reuse, revise, remix, or redistribute: Wiley, 2011) that closed ideas, information, and resources typically do not. Because of this, the philosophy of openness warrants consideration for official inclusion into the repository of educational tools that we expose to teachers. Helping teachers to understand openness will, through its diffusion, enable the development of a future generation that understands openness as well.

Open resources are free to access and use. They are often collaboratively created, freely distributed, and bestow users with powers that they do not hold over closed resources. Openness is also about community empowerment. Open resources often have knowledge communities, or communities of practice, surrounding them. Volunteers who are interested in the resource often form groups around the product and spend time discussing, examining, and experimenting with the resources that they like the most. As a result of their immersion in the topic, the community members often move toward becoming experts on the resources, and help others to learn about, solve problems with, and expand the use, of the resource (Brown, J. S. & Adler, R. P., 2008).

Because the least restrictive resources enable anyone to make changes to the resource, collaboration between groups and individuals from a broad variety of backgrounds is possible. The resources are also easy to infuse and edit so that they reflect the most current views on a topic. In a German study, Wikipedia was found to be more accurate, complete, and up-to-date than the established German Lexicon Brockhaus (e.g.: Stern, 2007). Many open resources are crowd sourced (i.e., used and inspected by many users) as a means of finding defects. This is also the reason to "release early, release often," which is a motto for open software development. The users report the defects, usually in a common place, and the interested volunteers begin working on fixes. As a result, the resource may often be more stable or be more usable by a wider audience more quickly than otherwise achievable (Raymond, E.S., 2003). Imagine what digital educational resources would look like that had been collaboratively created, checked for issues, and corrected entirely by professional educators, and imagine the feedback system required for the collaboration.

Collaborative open resources have quick response feedback systems built into their use and maintenance in the community that supports them. If there is a quality issue such as a misleading statement in a resource with heavy support, the interested parties will discuss and debate on the best solution for fixing the issue. Sometimes the fix is simple, with someone simply correcting the issue, while other times it consists of deep and spanning debates considering many perspectives about the potential impact for the item. This is frequently seen on Wikipedia in the discussion side of hot issues (Geiger, R.S., 2007). Adaptability is important as well. Educators can take resources meant for business and adapt them to the purposes of instructional design and development, for example, and then both communities can frequently update the resources. Also, if there are disagreements on the use of the resource, each party is free to take a copy of the resource and move in their own respective direction. For example, differences in belief about the direction of the Open Office Project lead to some of the developers forking the project and creating the Libre Office Suite. Aside from some rebranding, the two products are currently very similar, however with each successive update the two become more of their own unique individual products (Paul, R., 2010).

Drawbacks of Openness in Education

Often openness as an idea can hold a negative stigma. This is largely because some of its proponents are seen as activists, alarmists, or extremists. In addition, openness is still in its early stages, so many of the biggest and oldest examples of openness are still under twenty-five years old (with many being much younger) and issues with open products may not be judged within this light. Perception is often stronger than the truth in these matters, however I would argue that educators should evaluate the situation for themselves and use their best judgment regarding the use of resources. Also, there is some concern that openness, especially open educational resources (OERs), are potentially contributing to widening the digital divide, making it yet another fault line upon which potential educational fractures could occur (Lane, 2009). This situation will require some monitoring and maintenance if it grows out of hand.

As community sourced content, open information is free information that anyone can contribute to and use. Also, the systems and structures (like the idea) of openness are still in the early formative stages. Due to these factors, there are some dangers with inconsistency in the quality of some of the materials that you may encounter. In addition, you may encounter some difficulty in finding the resources that you need. These discrepancies should stabilize and work themselves out over time as the community rallies around establishing effective ratings and quality control systems for these resources; however they will remain something to be aware of when considering their use. You may need to use vetted resources or evaluate the product yourself to know how well it fits into your purposes (EDUCAUSE, 2010).

There is a lot of confusion and lack of awareness of the nuances of how to access, gather, and use the open resources. There are systems both in place and evolving that answer the confusion in this area. The OER Consortium has a list of OER repositories that have available content (OER Consortium, 2011). The best move here would be for educators to explore the resources and areas and determine for themselves what the best sources are. Some licenses are incompatible with each other, and this causes problems in utilizing resources for various purposes. All I can say to this is that creators should consider releasing under the least restrictive license that they feel comfortable with, and that users understand that the current situation is a step toward an end goal of ubiquitous plug and play resources available for free use by all.

Conclusion

The open system is still on its upswing. Successfully implementing and diffusing the philosophy of openness into society in a viable format will take the dedicated interest and work of a network of communities who are sharing. Ultimately, openness is one more tool to help educators in their mission, as well as to help society cohesively evolve. If openness becomes ubiquitous it will enable a community of sharing that will ideally change the limited mindsets and other factors that inhibit societal growth. Educating teachers about openness will encourage teachers to be aware of, and possibly collaborate on, new resources and projects that would benefit society as a whole and encourage the dissemination of openness throughout society.

Freedom of any sort comes with great costs. We now hold an opportunity to solidify the foundations of informational freedom and peacefully dethrone the forces that seek to oppress it through placing ever-increasing restrictions upon it. We must infuse the ideals of openness into our society and encourage the consideration of openness by demonstrating its practice in education. Most importantly of all, we must each make the choice of being open to the idea of openness.

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