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Flipping with OER: K12 teachers' views of the impact of open practices on students

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Abstract
In April 2013 the Hewlett-funded OER Research Hub (OERRH) Project, in collaboration with the Flipped Learning Network (FLN), conducted an online survey of flipped educators with the aim of finding out about their use of open educational resources (OER). This paper presents the results of this survey in relation to what school teachers consider to be the impact of OER on students in a flipped classroom; two brief case studies are introduced to exemplify how OER use leads to increased student engagement in their learning process.

Keywords
OER, flipped learning, K12, impact

Introduction
The OER Research Hub is a two-year project funded by the William and Flora Hewlett Foundation to investigate the impact of OER on learning and teaching practices. Working internationally in collaboration with projects across the school (K-12), college, higher education and informal learning sectors, the OER Research Hub is building a network of evidence for and against eleven hypotheses relating to OER, in addition to establishing methods and instruments for broader engagement in researching the impact of openness on learning.

One of the projects' collaborations in the K12 sector is the Flipped Learning Network (FLN), a community of teachers whose mission is 'to provide educators with the knowledge, skills and resources to successfully implement Flipped Learning' (www.flippedlearning.org). 'Flipped Learning' is defined as an alternative to the traditional lecture-centred model of education, one "in which digital technologies are used to shift direct instruction outside of the group learning space to the individual learning space, usually via videos" (Hamdan, McKnight, McKnight & Arfstrom, 2013:3). Prerecording the content of each lesson and asking students to watch the video as homework enables teachers to rethink how best to use their class time: instead of presenting information, they are now giving individual help to students when they need it, and facilitating more hands-on learning.

Methodology and findings
In the spring of 2013, the OER Research Hub conducted an online survey of the Flipped Learning Network to find out flipped educators' thoughts on the impact that their use of OER has on students. Nearly 300 respondents, of whom 109 were identified as using OER in the K12 classroom, completed the survey in a four-week period. Some of the findings are reported here: 85% (n= 75) of K12 teachers agree or strongly agree that using OER in the flipped classroom increases learners' satisfaction with the learning experience; 77.7% (n=70) agree or strongly agree that it increases learners' participation in class discussions; 69.6% (n=62) that it increases collaboration and/or peer support amongst learners; nearly 81% (n=72) agree or strongly agree that OER use in the flipped classroom increases learners' engagement with lesson content and

develops their independence and self-reliance; and 61.8% (n=55) that teachers' use of OER leads to improved student grades.

Some of these results were further explored in interviews with a self-selected sample of K12 teachers. Next, two brief case studies are presented that exemplify how teachers' open practices impact on students in a flipped classroom:

Teacher A is a high school math teacher. He has been teaching for two years, and always employing flipped learning. His has made his Statistics course available online under a Creative Commons Attribution Share-Alike license. On the syllabus he explains to students the open rationale of the course:

"In most courses, teachers use a reference textbook combined with their own material to teach. In some courses, teachers or teacher teams develop their own materials instead of a textbook, but those materials are usually private or unable to be shared openly due to copyright restrictions connected to how they were made. This course has been fully developed from scratch without such restrictions and is released free on the web for any teacher or student to use or remix. As a result, I do not treat this curriculum as "mine" -- it belongs to the class and to the world." (https://sites.google.com/a/byron.k12.mn.us/stats4g/home)

Declining sole ownership of the curriculum, he actively encourages his students to contribute to the course by creating an assignment that requires their attention to improve it: "The goal is to find an area of the course that could be better, or does not yet exist, design a plan to improve/build it, and carry out the plan." In our conversation, he describes how this occurs in actual terms:

"I have some kids looking at homework as a topic: how should homework be done, should it be assigned, should it be optional, should I post the solutions online (...) I have kids asking questions and thinking critically about their learning and how the curriculum works (...) In the statistics class I'm asking them to actually show me some evidence that their concerns are valid, so they are doing some surveying and asking peers and they're trying to understand what would make this class better and justify that".

Because Teacher A is asking kids to do something that they are almost never asked to do, a certain amount of resistance on their part is expected; however, he is also building a collaborative class culture where collaboration does not only happen peer to peer but at a level where teacher and students work together as peers: "Kids can get mad at me for my content because they are like 'Look at how awful this is' and I'm like 'Perfect, let's fix it (...) If I just took some other course and said 'Let's all take this course and make it better' and I put no effort into it myself that would be probably a lot more frustrating".

Teacher B teaches English in high school. She has been flipping her class for five years. She creates her own resources, most of which she shares publicly online, but also curates content created by others, having students at the core of her thinking:

"I guess my philosophy is that as teachers we should see ourselves as a worldwide learning community (...). The more we can actually build upon and use and collaborate with each other and see what's out there, the better our students are going to benefit from that."

Using OER has changed her role in the classroom, as she has moved away from talking at students to a more collaborative approach:

"I'm not so much the all-knowing Oz behind the curtain that we grew up with (...) Teachers were the holders of all knowledge and we were students, lucky to be in their presence. My students are able to see the fact that I'm a learner alongside of them and we can learn from each other (...) I by no means profess that I'm the only one that has this knowledge, that I'm the only one they can learn from, the only one who knows the right answers. This has changed the way my classroom operates."

With this in mind, she relates the difficulties of engaging her kids in learning about Chaucer, and her success at making homework meaningful for them through the use of OER:

"Even though I knew that we had to read Chaucer's Canterbury Tales, I could not send these kids home with Chaucer; there is no way they would read Chaucer or they'd try and they would fail miserably, they'd get frustrated or they'd hate it and that's not what I wanted them to have the experience of. So what I did is I created a set of videos that gave them all the background information about Chaucer and they were required to watch one video a night, (...) they would have to answer a high level question about that, and then they would come into class the next day and I would inadvertently slip in questions and comments that related to the culture of the time and why it's important to understand that. (...) Over the course of an entire semester all the kids turned in on average 82% of their homework, which is significant for me as an instructor because that made me feel that what I was asking them to do at home, whether it was to watch a video I created or whether it was to read something from the Royal Shakespeare Company, (...) they saw the meaning in doing that. That to me was a time when I was able to use free online resources for the best interests of my students".

Conclusion
These findings demonstrate that teachers' use of OER in a flipped classroom can lead to increased student engagement in their learning process. Further interviews are currently being examined in order to strengthen these results.

References

Hamdan, N., McKnight, P., McKnight, K. & Arfstrom, K.M. (2013). A Review of Flipped Learning. www.flippedlearning.org accessed March 17, 2014.

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