

What role can Prezi play in students' learning process?

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Abstract

This project offers an initial evaluation of using the online learning platform Prezi as a tool for increasing student learning within a MA unit in human geography. It does this by comparing the use of Prezi to four other learning activities conducted during the course. The aim of the project is to see whether the use of this technology became an end in itself, thereby distracting students and detracted from their learning, or whether it added some value to the course. Data comes mainly from five semi-structured interviews with participants. The qualitative data suggests that students appreciated Prezi because it allowed them to be more creative, to select and condense knowledge and to offer a new dimension to presenting knowledge. But, overall, lectures, discussion and group presentations were more important than Prezi in terms of their learning process. The only activity which was less important than Prezi was the other addition to the course: formal debates. Prezi appears to be able to complement students' learning when they have been able to acquire knowledge through other teaching activities. In essence, it can enhance learning based on more traditional, tried and tested teaching techniques.

Introduction

Active student participation during university education is seen as an important way of achieving the intended learning outcomes of courses and pro-

grammes. The belief is that student participation helps to achieve higher-level learning outcomes (such as hypothesizing, applying and reflecting) compared to passive and surface approaches to teaching (which may only support students to listen, memorize and repeat). Not only does activity itself help memory and recollection, but active participation by students reduces the learning deficit experienced by diffident and less academically-orientated students vis-à-vis their more able and confident counterparts (Biggs & Tang 2011*b*).

This project offers an initial evaluation of using the online learning platform Prezi as a tool for increasing student learning in the classroom. It does this by comparing the use of Prezi to four other learning activities conducted during the course: lectures; formal debates; group presentations; classroom discussion. Through this comparison, the project aims to highlight what Prezi can and cannot contribute to students' learning process.

The project report is structured in five sections. First, full details of the course are offered along with a description of the author's role in teaching and course development. Second, the rationale for the study, and the problem the study aims to reflect on, is introduced along with the overarching and specific research questions of the study. Third, the methods used to evaluate the teaching activities in the course are explained. Fourth, the results, the reflections of students and interpretation by the author are presented together. Fifth, this leads to a broader discussion and the tentative and necessarily suggestive conclusions of the study in relation to teaching in higher education.

Course description

The course constitutes the first part of a 15 ECTS MA course in geography taken in blocks 1 and 2. Both parts are entitled 'Environment, Society and Development (1 + 2)'. The course we are concerned with here is ESD1 which takes place in block 1. It introduces students to a genealogy of theories within development geography from the Second World War: modernisation theory; structuralism; dependency theory (and associated Marxist approaches to underdevelopment); neo-classical economic approaches as well as more recent post-structuralist and post-colonial theories. It also covers topics of central importance to current development research, such as poverty, participation, gender and value-chain approaches. From 2014/15 the course will be separated into two separate 7.5 ECTS courses due, partly,

to the difficulties in combining both the developmental and environmental sides in a coherent syllabus and exam. The intended learning outcomes of the course are included in Appendix A.

In 2013/14 the course took the form of 14 sessions which ran through September and October 2013 with an average class taking 150 minutes. Twenty two students participated in the course and completed the exam. The majority were Danish with their first degrees in geography or related disciplines from Copenhagen, Åarhus or Roskilde. They had differing degrees of work experience, some with a number of years of employment at NGOs or government bodies. The majority have travelled abroad, some for a considerable length of time. The international students were two Zambians, three students from the US, one from New Zealand and one from Brazil. There was a considerable mix of abilities in the class, with some older students possessing deep knowledge on development geography and others coming completely fresh to the subject. The challenge was to tailor teaching tools to engage all students and allow those students with more experience to share their knowledge with the rest of the class.

Each class would drill down into the literature on one of the theories or topics in development geography. Students were required to read mandatory texts and were provided with a more extensive set of optional readings for each class (see Appendix B). During the first class, students chose which of six groups they would be part of and these groups remained constant during the course. Each of the 14 sessions was broken down into chunks. For example, the timetable for Class 4 which was on dependency theorists and associated thinkers (see Appendix B for the expected learning outcomes and reading list) was structured as follows:

- 09:00 Presentation of mandatory articles by Group 2, followed by discussion in plenary
- 10:00 Lecture on dependency theory and associated schools of thought
- 11:15 Debate between Group 1 and Group 2 – Modernisation theory vs Dependency theory

The author first taught ESD1 in September 2012 during his first four weeks of employment at the University of Copenhagen. He was obliged to complete the first 7 sessions after which a colleague facilitated the last seven sessions. In 2012 the author was provided with a set of readings, a reading list, a classroom and a group of twelve MA students. There was no course manual. There was also no time for any alterations to the course nor any space for reflections between the teaching classes. It was simply a matter of

delivering the material in the format in which he had experience: lectures, student presentations and group discussions.

Due to the opportunity to teach all 14 sessions in ESD1 in 2013/14, the author made some alterations to both the content and structure of the course. In addition to writing a course manual, completing intended learning outcomes for the course and for each class, the author introduced two new activities within the class: formal debates between groups; and the use of Prezi, an on-line working environment where group members can collaborate on a canvas to create a non-linear presentation using most kinds of media. The students were introduced to Prezi in Session 1 and were informed they would use it to offer present their summary of the course in Session 14. They were also informed they would be given a small amount of class time to work on it.

In addition to the three previous activities, this led to five main types of learning activity in the course:

1. Lectures
2. Formal debates
3. Group presentations
4. Discussion
5. Prezi

Rationale and research questions

The rationale for this study was that a preliminary literature review highlighted a very limited number of academic articles which focus on how Prezi can contribute to learning in higher education. Most recent articles, such as Perron & Stearns (2010), Lightle (2011) and Laufer et al. (2011) simply offer an overview of what the software does, not whether students find it contributes to their learning. Whilst bender & Bull (n.d.) and Campbell & Williams-Rossi (2012) focus on students' experience of using Prezi, their studies focus on secondary education. One exception is Conboy et al. (2012) who discuss its use by students at Liverpool John Moores University, UK. Based on focus groups with undergraduate students and interviews with both students and staff, Conboy et al. (2012) found that Prezi encouraged non-linear learning amongst students, encouraging the use of mind maps and brainstorm techniques to a greater extent than Powerpoint did. Moreover, they found that students appreciated the ability to create and

edit documents simultaneously through Prezi (although they would have to utilize a separate chat function as this is not integrated into the software). Lastly, they found that Prezi was particularly appreciated by some under-performing students whose learning was more visual than text based.

The dearth of literature in using Prezi as a teaching tool within higher education is also evidenced by searches of key science education and higher education journals. Searches of *Studies in Higher Education*, *Higher Education Studies*, *the International Journal of Science Education*, *Science Education*, *Studies in Science Education* and *Cultural Studies of Science Education* did not yield any articles that investigated the use of Prezi in higher education. Whilst there does appear to be a gap in the literature, it is also important that this project focused on a particular problem. The issue it focused on is whether the use of this technology became an end in itself, thereby distracting students and detracted from their learning, or whether it added some value to students' learning process. This was through the comparison to the other, more established, learning activities.

To summarize, the main research question for this study was:

- To what extent and how does Prezi contribute to students' learning process?

Subsidiary questions were:

- How does Prezi compare to other teaching activities?
- What is an appropriate role for Prezi within higher education courses?

Methods

Due to the limited time and budget for this project, the main form of data comes from five semi-structured interviews with participants in ESD1. These typically lasted 30 minutes and had three sections. First, students were asked about their university education and the teaching activities and assessments formats they had been exposed to in other institutions. The aim of this part of the interview was to encourage students to discuss their experiences of tertiary education, to relax and to try and establish some form of rapport with the student. We then focused specifically on the ESD1 course and participants reflected on which of the five activities they found beneficial for their learning. The last part of the interview took the form of

a ranking exercise where the students positioned the five activities in order of which contributed the most to the least for their learning process. The interviews were transcribed and coded using Nvivo 10. This interview data has been supplemented with some data from a generic end-of-module questionnaire which included both Likert scales and open-ended questions.

Naturally, to rigorously test the impact of an intervention in a classroom setting in a statistical sense, one needs to control for selection bias. Typical ways of overcoming this problem are to run randomized experiments, or when this is not possible, to use quasi-experimental methods to try and recreate the conditions of a treatment vs. control comparison. It should be apparent from the above that such methods were not feasible within the scope of this project. Instead of offering statistical certainty, a qualitative study like this offers suggestive results. But this does not mean they are anecdotal: they help to highlight key processes and behaviour which often underpin the impact findings that quantitative studies can offer. In this respect, they are a vital first step in understanding how an intervention works and whether it should be scaled-up and evaluated rigorously.

Results and student reflections

The results from the study are divided into seven sections. A quick overview of participants' educational background is offered before we discuss students' experiences of each of the five main types of teaching activity in ESD1, ending with Prezi. We end by presenting the results from the ranking exercise.

Participants' educational background and experience

The students came from a wide range of disciplines stretching from nutrition to wildlife management and to economics. All had experienced tuition within at least one other Danish university and many had studied in a number of cities or countries. The students displayed a variety of experiences of teaching methods in higher education. Most commonly encountered had been lectures and group work. The size of lectures varied from 20 up to 300. Three students were also familiar with tutorials, small reading groups of 10-15 where a tutor goes through the lecture material in more depth and in a more comfortable environment. The students had also experienced a wide variety of group work projects and exercises, which lasted from one

day through to a whole semester. Group sizes also varied from 2 through to 50. Only one student referred to fieldwork as an educational activity. One had also experienced timed exercises classes with closed questions to complete.

Lectures

All of the students interviewed felt that including lectures in the course were an important, and for some, vital part of their learning process. As student C stated:

“Well... I am typically taught in that way... and I feel that if I didn't have that in the course I would feel that something was lacking. Often in courses here I feel that there are not enough lectures... As a teacher is a teacher and they should know more about the subject than the student...”

So if you didn't have lectures...?

I would feel lost, as the discussions wouldn't be relevant as I wouldn't know if they were... Accurate. It's about accuracy, being able to guide the discussion in an appropriate way. It is also about authority, I suppose”

But the balance between lectures and other classroom activities was varied for the respondents. For example, student D complained that there were too few lectures in the class. This was echoed by 3 of 16 respondents to the end-of-course evaluation. On the other hand, student E remarked:

“The lectures were good to get some of the bullet points out, but then I tend to switch off during the lectures and I will lose valuable learning from the lecture. I would prefer shorter lectures and more classroom discussion.”

Clearly, the right balance between lectures and other teaching activities depends on the nature of the students themselves.

Formal debates

A further teaching activity was a series of formal debates where two groups would prepare and conduct a discussion focused on a proposition. In each

debate, each group's position would reflect a key theory of development geography. The respondents appear to have enjoyed and appreciated the debates. As students A, B and C stated:

“Basically... debates are very normal and should be encouraged (laughter)... in a society for progress to be there. This was a good way for the students to be active. Students weren't just being active, but they were arguing based on what you have learnt, that makes you to be awake, that was very good”

“Yes, they were useful. It was good that I participated in the debates. It gives confidence in what you are doing, that you have to stand for what you are talking about, be able to find reasons to defend the line of thought. For me I think it is one of those activities that is important because you can dig further in what you are trying to put across. You have varied views and you try and come up with imaginations before you sit there and start and talk...debates may actually make you go further.”

“I really liked the debates although I sucked at it myself, but I don't know what happened, but I really think it was funny and difficult and I was so impressed with the guys, you know, that's a way to actually use, your knowledge. Then you have to come up with counter arguments fast, that's a good way to digest what you have read. It was a good idea and it was funny.”

But this feeling wasn't shared by all the interviewees. For example, student E was less enthusiastic:

“There were just two groups with few other people pitching in. They were fun to listen to but I don't get much out of them, Typically, I will follow the first 5-6 arguments and then I would lose concentration and drift off. The entire idea of following the debate has gone and you've lost some of the arguments.

In the first debate we had group feedback on the debate? Was that helpful?

I can't remember that”

Once again we find the degree to which students appreciated a learning activity depends on the character of the student.

Group presentations

The students also had some mixed views on the use of group presentations in the course. Student E found them to be only helpful to his learning process when he participated, not otherwise:

“For me, it was good to do them but not to listen to them. When I was forced to learn I enjoyed it, but then listening to other groups was difficult. Like in the introductory class, I was in group one and realise that I had less than 48 hours to read 70 pages and then present this to the class. In academic English. That’s a large hurdle to climb. Sometimes you just have to limit your ambitions, and focus on what is most important to present to the other people in the room.”

Similarly, student C felt that it was only when she was part of the presenting group that she benefited from this kind of classroom activity. Student C also highlighted how the student presentation of readings led, in some cases, to superficial repetition and memorizing instead of deeper-level reflection on how the articles fed into the intended learning outcomes:

“I think it’s difficult with the presentations as that you mainly read for when you are doing the presentations, the rest of the time you know that someone will present them so you don’t prepare. That is what happens. And I think it would have been much better, if the presentations were, because I really like that at the beginning of each class you have the learning outcomes, I really tried the two times I was presenting, but we really didn’t succeed at all, but I think it would have been better if you only do one presentation each group, and the presentations should be about the learning outcomes. So I think there were too many group presentations.”

Such a comment is useful feedback as in the future it will be helpful to try and steer group presentations more towards the intended learning outcomes of each class (to try and reduce low-level learning behaviour such as memorizing copying and paraphrasing). Student C also had ambivalent feelings towards the group presentations, but this was mainly due to her personality

“I also resented the presentation as well, because I do not like speaking in front of a group so much. But I found them to be a good way of discussing papers in a class because a lot of time my interpretation were different from the other people who had also

read them and I really enjoyed the discussions in class after the Powerpoints, because they made me see different points of view that I would never have thought of before. I don't even know how those people thought of those things to say, but I was nervous, really nervous. Not that it was horrible, but just that I was really nervous."

Through the anxiety, we can also see how this student found the presentations as a good springboard for the broader discussion in plenary.

Discussion

Surprisingly for the author, all of the students interviewed felt this type of teaching activity was one of the most important for their learning:

"The other part was... the open discussion in class, I found this a very positive one, moving away from the experience I have in my country, with the lecturer just talking. In ESD1, it was different, if your mind was not clear you could just raise your hand and ask and then it would be cleared, you would understand more. For me, that made me feel part of parcel of the course. I appreciated it."

"I think they are the most interesting part of it. I'm not sure if we can make checks on the learning outcomes afterwards, but it's a good part. There should have been more space for discussions, I think so..."

"I like it with a short introduction and then it develops into a classroom debate where everyone is pitching in, you then really get to hear what other people have got out of reading the same text. It can really give you the 'ah-haa' experience, instead of being in a little bubble of your own, you can also expand your horizons and you can also use other people's arguments and use their way of viewing the texts"

"It engages all the students, including me... the classroom discussions were most important for me, where everyone pitched in. As far as I read the classroom, that is."

But this is not to say that all people in the class participated equally. For example, one student was quite reserved about taking part in the discussions:

“I enjoyed listening to them. I enjoyed listening to the discussion, I can't talk and think and listen quickly .. or I would say something I didn't mean...

But you participated as well?

No... (laughter)... I mediated sometimes but I didn't say anything...

You enjoyed them so much but you didn't participate? Why? So often when people say they really enjoyed an activity it was because they participated, but for you... ?

Because I don't think of those things....the things that people were saying were new, knowledge that I didn't connect myself, so sometimes I would have ideas... but I didn't think they were well developed enough to articulate... I guess when people are speaking... I find that Danish people are used to participating in class and voicing their opinions... in my learning system it was more you raise your hand and ask the teacher directly and often you do not contradict them. So this comes from your own educational background...

Did you feel that this course... made you more able to do that?

A bit. But the terminology... such as the economic terminology.. and I am not so well versed in neo-Marxism and orthodox Marxism so.... The terminology was a bit intimidating....I've studied these theories before.... Two times before, but this time they sunk in a bit more.”

This now brings us to the main subject of the project, Prezi.

Prezi

To recap, students were introduced to Prezi in the first class and asked to work their group to complete and present a summary of the course in the last class (session 14). Four of the five students found Prezi to be a positive addition to the course. For example, student A stated that:

“At first I was confused and thought... I don't really know about this Prezi thing. But I really enjoyed it afterwards (laughter)... so

it was one of those creative ways of involving students, it shows some high levels of creativity and can bring a new dimension to the course”

Student C offered a similar experience of growing to like and enjoy the use of Prezi:

“At first I resented the Prezis a bit. But when I got to do them I found them to be very helpful. You had to really pick out what you thought was important to remember from the different theories... and the Prezi presentations. You felt a bit nervous about it... But many people in my group told me that it’s a good way for them to condense their knowledge in an accessible way.”

Two further students stated were more fulsome in their praise of the learning activity. For example, one stated that:

“Maybe the other activity which I will never forget and which I can add to my CV now is learning how to use Prezi. It was wonderful for me. This was an activity I didn’t know about so I heard about it in this seminar class, so maybe even for my presentation of my thesis I may try to use the same Prezi to a different forum.”

The final student was less enthusiastic about Prezi but this was mainly due to the group dynamics instead of Prezi itself:

“The Prezi presentation became a bit of a nuisance. We had to finish this off. We didn’t work on it during the course but pushed it to the end. We then tried to get cracking at it during the vacation week and the end of the course but it turned out the girls were out travelling. One guy was sick during that week. There were only two of us. I would like to use Prezi in the future as it is a more vibrant interactive media to use, instead of a .ppt.”

To summarize, students appreciated Prezi because it allowed them to be more creative, to select and condense knowledge and to offer a new dimension to presenting knowledge. We also see students opinions about Prezi through the ranking exercise.

Ranking exercise

The final section of the interview asked students to rank the five classroom activities in terms of how they benefited their own learning process. The

Ranking of learning activities in ESD 1 20013/14					
<i>Top</i>	Lectures	Discussion	Prezi	Lectures	Discussion
	Group presentations	Group presentations	Group presentations	Prezi	Lectures
	Discussion	Lectures	Discussion	Formal debates	Group presentations
	Formal debates	Formal debates	Formal debates	Discussion	Prezi
<i>Bottom</i>		Prezi		Group presentations	Formal debates
<i>Overarching</i>	Prezi	Essay	Lectures		

Fig. 31.1. Ranking of learning activities in ESD 1

results are shown in Figure 31.1: We can see how, overall, lectures, discussion and group presentations were more important for students than Prezi in terms of their learning process. The only activity which was less important was the other addition to the course: formal debates.

Does this mean that the innovations introduced into the course hindered students' learning? That they shouldn't be included? We can learn more about the reasons for these rankings through the students' own justifications. For example, one student refused to position Prezi with the other activities as they felt it had a special status:

“I think Prezis need to have a separate category on its own. It summarized all the activities we have had during the course.. All the activities lead to the Prezi presentations. I regard it as standing on its own, it's more creative.”

One other student accorded the same 'overarching' status to the essay, another to the lectures. A further student reflected that:

“It's funny that I was so much against Prezi. You asked us to work on Prezi and I really didn't see the point, like I just had to go to work and it was such a pain trying to learn it. But when I was starting to prepare it at home, I made two... it kind of made more sense to me that way.”

We can see in both of these quotes that the use of Prezi as a summarizing tool does have some value. Without wanting to read too much into quotes, it appears to have allowed students freedom to choose the way they wanted to review and condense the material. It is perhaps this freedom to use whatever media you like, in whatever sequence and structure you like, that students find most engaging. What is also clear from this study is that Prezi appears to complement the more established and tested teaching activities. It does

not appear to detract from the learning process and allows students leeway and a blank canvas on which to depict their understanding of the theories at hand.

Broader discussion and conclusion

Conboy et al. (2012) found that Prezi encouraged non-linear learning amongst students, encouraged simultaneous conduction and editing of projects, and especially supported the learning of students who were more visual in their learning that based. The tentative findings here are that Prezi is not a panacea for student engagement and learning, but neither does it deflect attention from the topics being taught. It was welcomed by students who, despite initial reticence, warmed to the software and found it allowed them to be more creative, to condense knowledge better, and to offer a new dimension to presenting knowledge. The more important finding, though, is that Prezi can only be used by students when they have been able to acquire knowledge through other teaching activities. It appears to be able to play a role in teaching in higher education when put in the hands of those who will learn it fastest: the students. But it's a limited role which will enhance learning based on more traditional, tried and tested teaching techniques.

As we saw earlier, the use of technology in the classroom can, in some cases, become an end in itself, thus distracting students from their learning. This tentative investigation in the use of Prezi as a tool for students to summarize a 7.5 ECTS course found that it appears to complement existing teaching methods well. Students appear to enjoy the freedom and creativity the software affords them. But there is no evidence presented here that suggests Prezi should be seen as anything other than one teaching activity amongst many within a broad, varied and, of course, highly participatory teaching regime.

A Appendix 1

Intended Learning Outcomes

Knowledge: Students will be able to...

- Identify, locate and summarise the broad theoretical underpinnings of research within development geography and relate this to debates and shifts in the wider social sciences;
- Describe how theories of development geography have changed in the past six decades and be able to see the relationships and ruptures within this time period as well as connections to earlier theories of development;
- Identify a particular theoretical tradition or topic they have interest in.

Skills: Students will be able to...

- Succinctly summarise and present, both verbally and in writing, material based on individual and group work;
- Collaborate with fellow students in compiling an overview of theories of development geography and contribute to the presentation of this overview to the class;
- Conduct a literature review to select two recent articles from geographical journals to be discussed in their essay;
- Structure and write a 2,500 word essay.

Competences: Students will be able to...

- Compare and evaluate different traditions in development geography and apply this knowledge to assess the appropriateness of these schools of thought for answering different types of research question.

B Appendix 2

Class 4 - Thursday 12th September - Dependency theorists and associated thinkers

By the end of this session students should be able to: describe and differentiate between different schools of thought within Marxist-inspired theories of dependency and development; recognise the particular sets of political and economic conditions which fostered this set of theories; and highlight the weaknesses of these approaches to development geography.

Mandatory reading

So, A.Y. (1990) *Social Change and Development: Modernisation, Dependency and World-System Theories*, Sage, London. Chaps. 5 and 8.

Amin (pp. 20-25) in Simon, D. (ed.) (2006) *Fifty Key Thinkers on Development*, Taylor & Francis, US.

Cardoso (pp. 61-67) in Simon, D. (ed.) (2006) *Fifty Key Thinkers on Development*, Taylor & Francis, US.

Frank (pp. 90-96) in Simon, D. (ed.) (2006) *Fifty Key Thinkers on Development*, Taylor & Francis, US.

Optional reading

Wallerstein, I. (2004) *World Systems Analysis*, Duke University Press, London, Chps. 1 and 2.

Wallerstein, I. (1983) 'The Rise and Future Demise of the World Capitalist System: Concepts for Comparative Change' in Alavi, H. and Shanin, T. (eds) (1983) *Introduction to the Sociology of 'Developing Societies'*, Macmillan, London, p29 - 53.

Brenner, R. (1983) 'The Origins of Capitalist Development: A critique of 'Neo-Smithian' Marxism' in Alavi, H. and Shanin, T. (eds) (1983) *Introduction to the Sociology of 'Developing Societies'*, Macmillan, London, p. 54 - 71.

So, A.Y. (1990) *Social Change and Development: Modernisation, Dependency and World-System Theories* Chaps. 6, 7, 9 and 10

Arrighi, G., B. J. Silver and B. D. Brewer (2003) 'Industrial Convergence, Globalization, and the Persistence of the North-South Divide' *Studies in Comparative International Development*, 38 (1), pp. 3-31.

A. H. Amsden (2003) 'Good-bye Dependency Theory, Hello Dependency Theory' *Studies in Comparative International Development*, 38 (1), pp. 32-38.

Bernstein, H. (2005) 'Development studies and the Marxists' in Kothari, U. (ed.) *A radical history of development studies: individuals, institutions and ideologies*, Zed Books, London.

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