

Directions: An electronic copy can be found at: <http://www.sfu.ca/istld/tldg/handouts.html>. Please submit reports to Cheryl Amundsen at tldg-info@sfu.ca. Generally, final reports are uploaded with project descriptions on the grants program website (<http://www.sfu.ca/istld/tldg>). If you do not want your final report uploaded, for any reason, please let us know when you submit it.

Title of project: Engaging students in sustainability learning: comparing reading-related activities in online and in-person courses

Principal applicant (e.g. professor, lecturer, limited-term, etc.):

Name: Mark Roseland

Position (e.g. professor, lecturer, limited-term, etc.): Professor

Faculty: Environment

Department/School: Centre for Sustainable Development, School of Resource and Environmental Management

Collaborator(s) (e.g. professor, lecturer, limited-term, doctoral student, staff title, etc.):

Name: Maria Spiliotopoulou

Position (e.g. professor, lecturer, limited-term, doctoral student, staff title, etc.): Doctoral student and sessional instructor

Part I – Report project findings

1. During the project, did you do anything differently than planned in your final grant proposal? If yes, please describe and explain why.

As described in the project proposal, we customized the activities used in our previous project (fall 2016) so that they are suitable for an online course and we adapted the readings of this online course to match those used in the in-person offering in the fall 2016. We also designed and delivered online questionnaires for students and the Tutor Marker to evaluate the effectiveness of the activities. The project was implemented in the course SCD 301 Sustainable Community Development Theory and Practice. The only shortcoming of the actual project when compared to the grant proposal is that we didn't implement a protocol for observation of online activity due to the high enrolment that kept the Tutor Marker busier than expected. However, as discussed below, the comments he provided us with at the end of the semester reflect his informal but continuous observation of the student activity on Canvas throughout the semester.

2. Organize your findings in a way that makes sense to you, but please attend to the section in your Final Proposal titled “Contents of Final Report”.

The first step of this project was to adapt the four activities we used in the previous project, i.e. to adapt them from the face-to-face version of the course (fall 2016) to the online version (spring 2017). In this process, we encountered challenges for two of the four activities, but the other two activities turned out to be more suitable for an online learning environment than in the classroom. Below are more details about the process of adapting the activities as well as the results from the student and TM feedback in the spring 2017, particularly as compared to the fall 2016 project.

- **Activity 1 – “Literature circles”**

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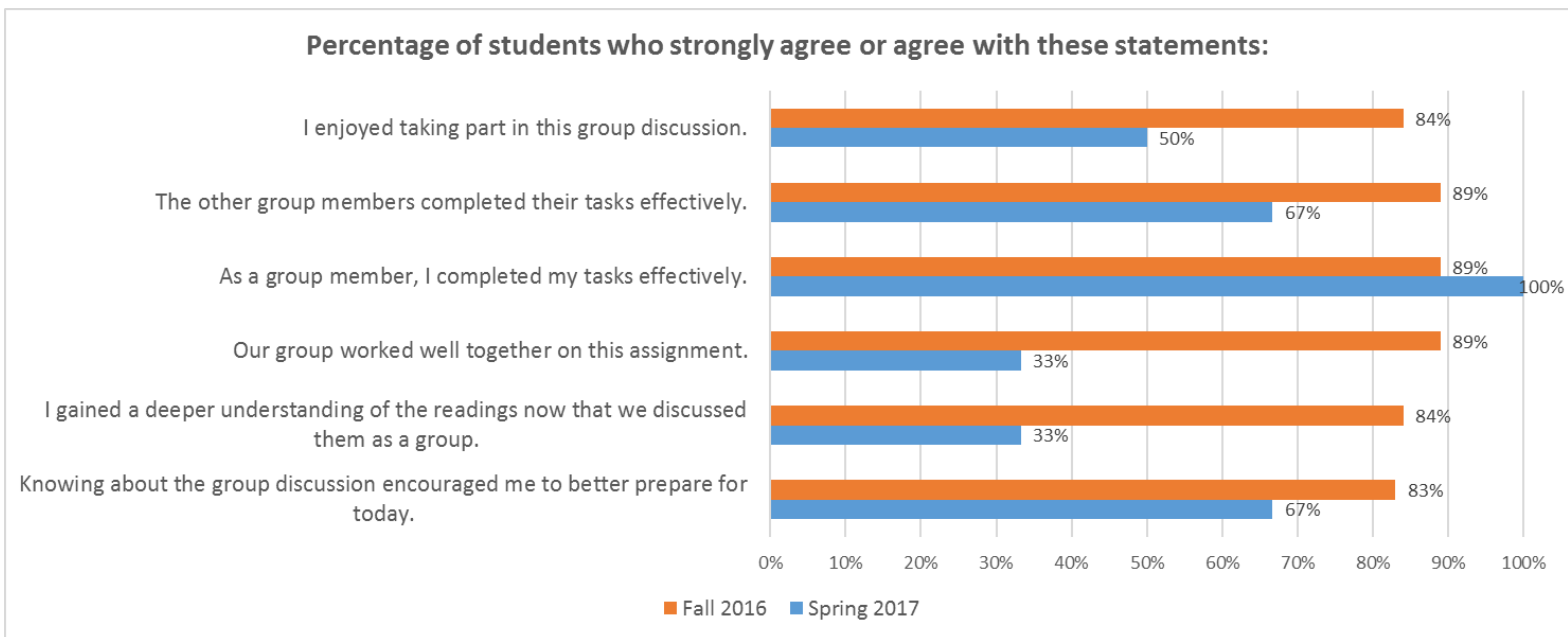
Adaptation

We found it quite challenging to deliver the first activity on Canvas. “Literature circles” are based on instant interaction among members of the same group and are thus best delivered in the classroom. However, we adapted the activity as follows: students were randomly assigned to a discussion group and, based on their readings (journal articles, videos, and websites), they were requested to respond to five specific questions and discuss within their group. Some confusion was generated because Canvas allows students to create their own discussion threads and areas, and therefore some students started discussing in areas outside the activity pages.

Student evaluation

As seen in graph 1 below, spring 2017 students were overall not satisfied with this activity (blue line). Although most believe they completed their individual tasks effectively, they either didn’t enjoy the discussion or they didn’t think that this group discussion was efficient and helpful for their learning. In contrast, most fall 2016 students reported positively in the same questions relating to the effectiveness of the literature circles (orange line). However, the spring term Tutor Marker noticed and pointed out that students generally appeared to be engaged with the topic and they had lively discussion and debate.

Graph 1. Students who strongly agree or agree with the statements on the left, in the fall 2016 and spring 2017.



Notes

In spring 2017 we received only 6 completed evaluation forms, despite using incentives (gift cards) to motivate students to respond to our survey. Low participation certainly affects the results and may compromise our attempt to compare to fall 2016 results. Therefore, the apparent discrepancy between the student survey responses and the TM’s observations may be due to the inevitable extrapolation from just 6 out of the 29 students enrolled.

We also wanted to mention a fun -yet interesting- side note: a student suggested that it would be “*better if they had summaries or notes of the readings and videos*” or other material we assign. As in all our

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online courses, each module has an introduction summarizing the topic and a separate page with learning objectives and related questions to reflect on.

Recommendations

When implementing activities that entail meaningful and collaborative participation in Canvas, it is necessary to provide students with clear and detailed instructions to avoid confusion inherent to online discussion boards and platforms. The technical issues were brought up by half of the students who responded to our survey and by the TM. We would recommend that the instructor and -if applicable- the TM(s) run through the entire online activity when they plan to adopt it for the first time, so that they can provide students with step-by-step instructions.

In any case, through this experience we learnt that, even in online courses, splitting students in several discussion groups can help them focus and offer useful comments, rather than putting all their effort and time in commenting on as many of their peers’ posts as possible and thus missing the point of the activity.

- **Activity 2 – “Double-entry journal”**

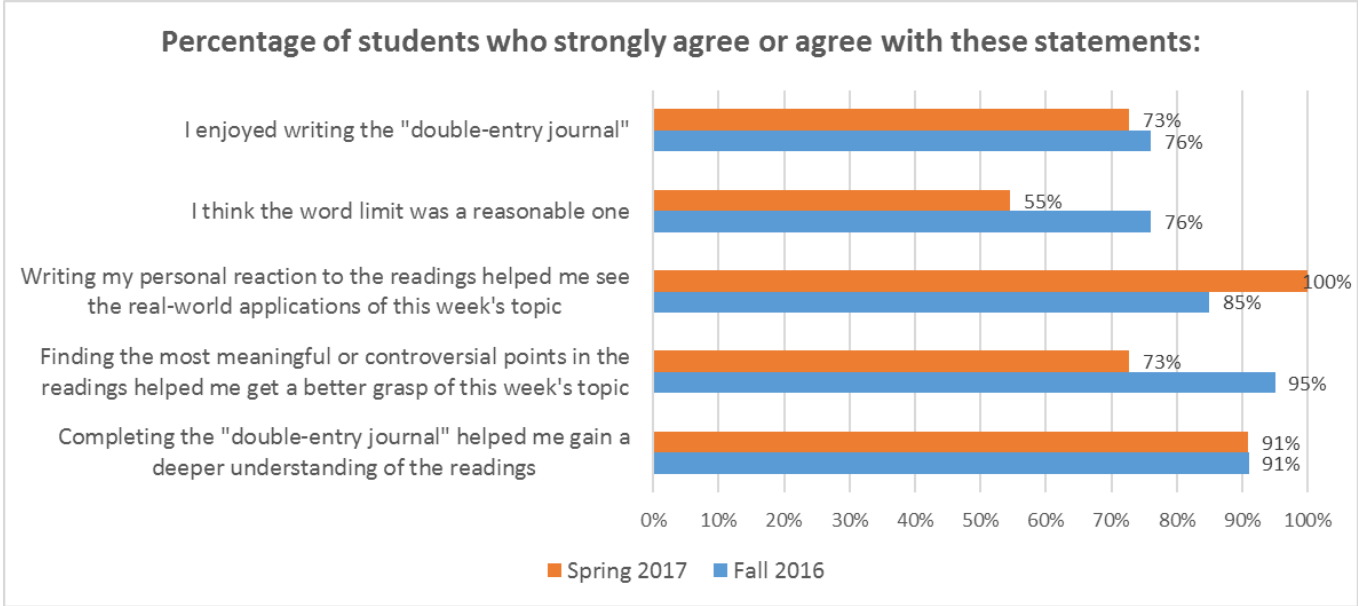
Adaptation

Having delivered the second activity on Canvas in the fall 2016 as well, it was much easier for us to adapt it to the online course context and for students to engage more than with the first activity. For the “double-entry journal”, students had to reflect on and write about something they found meaningful or controversial in the readings, and then respond to two questions that linked a real-world case study to the readings. As an individual assignment, this activity was quite straightforward and simple to set up and mark.

Student evaluation

In this activity, it seems that students in both cohorts generally share opinions when it comes to agreeing (or strongly agreeing) with the statements seen in graph 2.

Graph 2. Students who strongly agree or agree with the statements on the left, in the fall 2016 and spring 2017.



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We noticed that half of the spring term students (orange bar) found the word limit not reasonable, which can be explained by the fact that their entire course is online, they don't meet each other or the instructors, and their only way of making their work visible is through writing (potentially long) text.

Also, the reading list for that week was admittedly long (five documents/papers, one 12-minute video, and two websites), and this explains why only one out of 11 students stated that he/she had prepared all material; it was surprising though to see that only this one student watched the video, which we would expect to be the most preferred resource.

Finally, some students added thoughts in the comments section, mainly speaking to the potential value they see in such activities which “force” them to be concise and specific, and to explore real-world examples and summarize them. One student suggested that this activity could be used for regular check-ins so that students “*reflect on things that they may not want to, but should*”.

Notes

Having received 11 completed evaluations for this activity (i.e. more than for activity 1), we were provided with more reliable results that we could more readily compare with the fall 2016 evaluations.

Recommendations

We recommend that this activity be used at a regular basis in a course as a five-minute assessment of the students' understanding of the topic and the readings. Based on the Tutor Marker's feedback, the instructions should be stricter and directly connected to the grading scheme, so that students articulate their views and arguments in a compelling and well-documented way.

- **Activity 3 – “Fishbowl debate”**

Adaptation

While the topic was the same as in the fall 2016 (the Metro Vancouver transit referendum in 2015), the online “fishbowl debate” was implemented in two phases or weekly modules in the spring 2017. In week 8 of the course, students were asked to read the material provided and participate in a discussion in their assigned group (Yes or No side of the debate) to prepare for the debate. The actual debate took place in week 9 as a “Graded Online Discussion”. As mentioned, in week 9 students were required to engage in meaningful discussion debating whether the YES or the NO result in the referendum would have been more beneficial for Metro Vancouver.

Thanks to our experience from solving the technical issues and confusion in activity 1, we provided students with detailed instructions, as well as a set of discussion rules, such as to be reminded of the side they were supporting, to read each other's posts carefully before replying, to respect each other's views and arguments, and to limit their posts to a maximum of 100 words per post; this last rule was adopted out of precaution, primarily to protect them from having to read through endless posts before they even manage to post themselves, due to the limitations of online discussions that are open for several days.

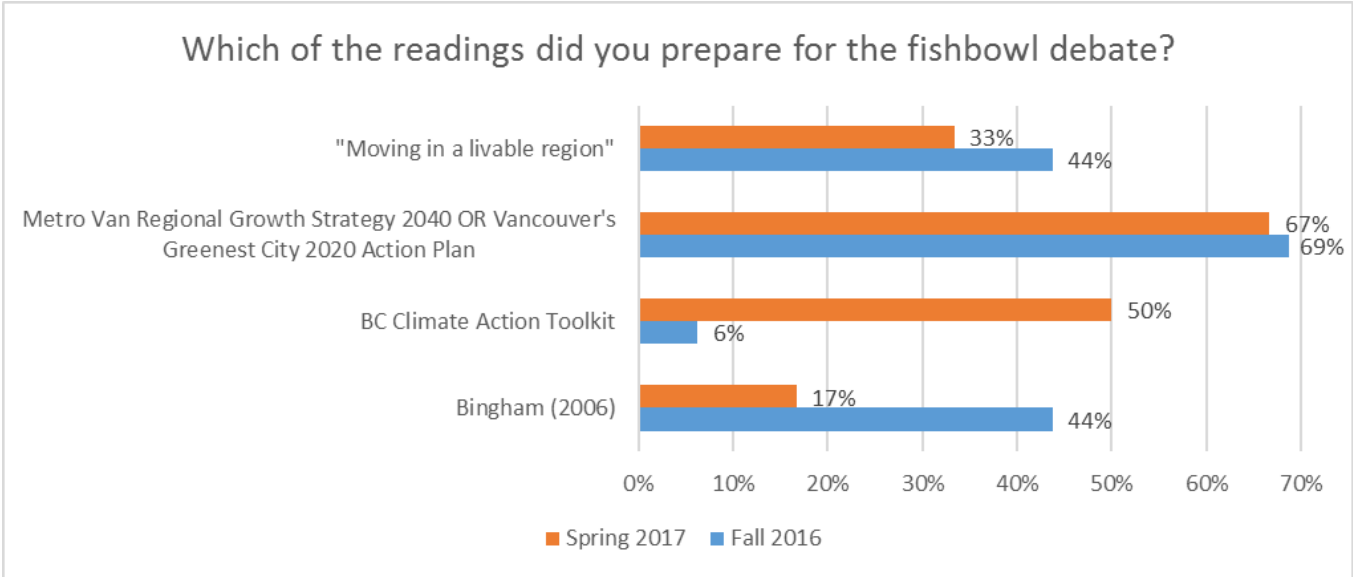
Student evaluation

The following graphs show how students of the two cohorts responded to the same questions. It is worth mentioning that the sample in the fall 2016 was 16 students, but in the spring 2017 we received completed forms from just 6 students. Even though the reading list in the spring term was composed of

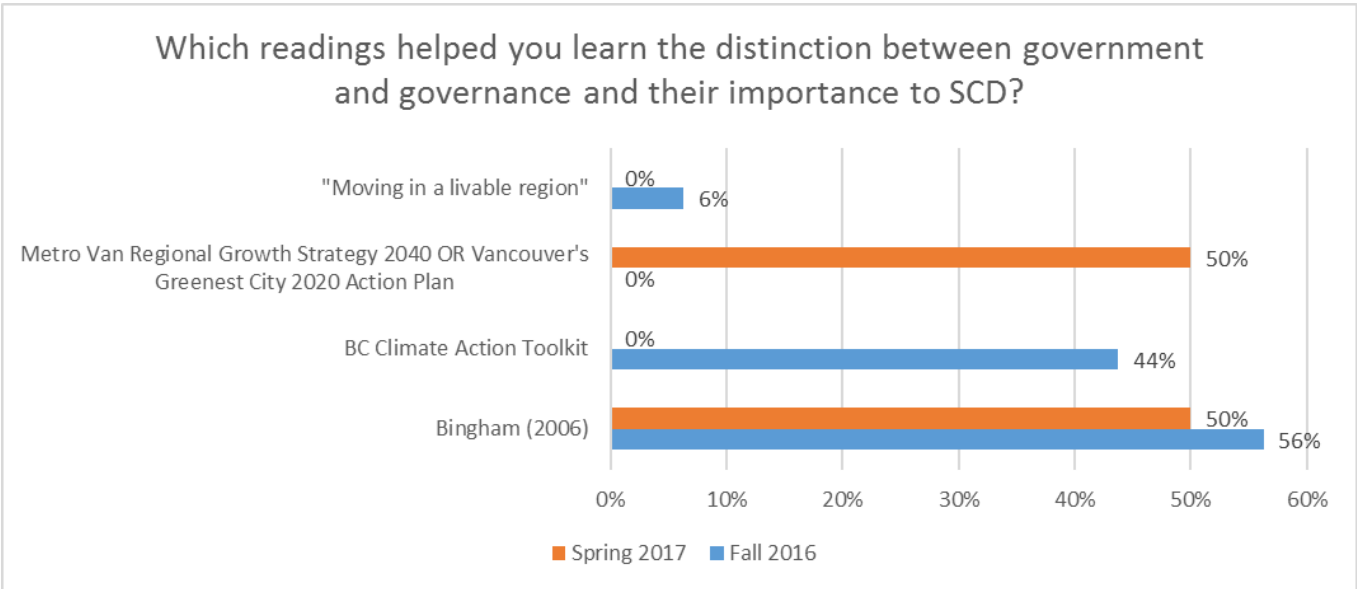
only four items (two papers and two websites), none of the students did all of them. What stands out, however, is that in both cohorts, the number of students who stated that the Bingham reading helped them “*learn the distinction between government and governance and their importance to SCD*” is higher than the number of students who claimed to have read the paper. We can’t seem able to offer a good explanation for this, other than the possibility that the students may have not been very honest when responding to the above question.

Graphs 3-6. Student responses in the following questions; in the fall 2016 and spring 2017.

Graph 3:

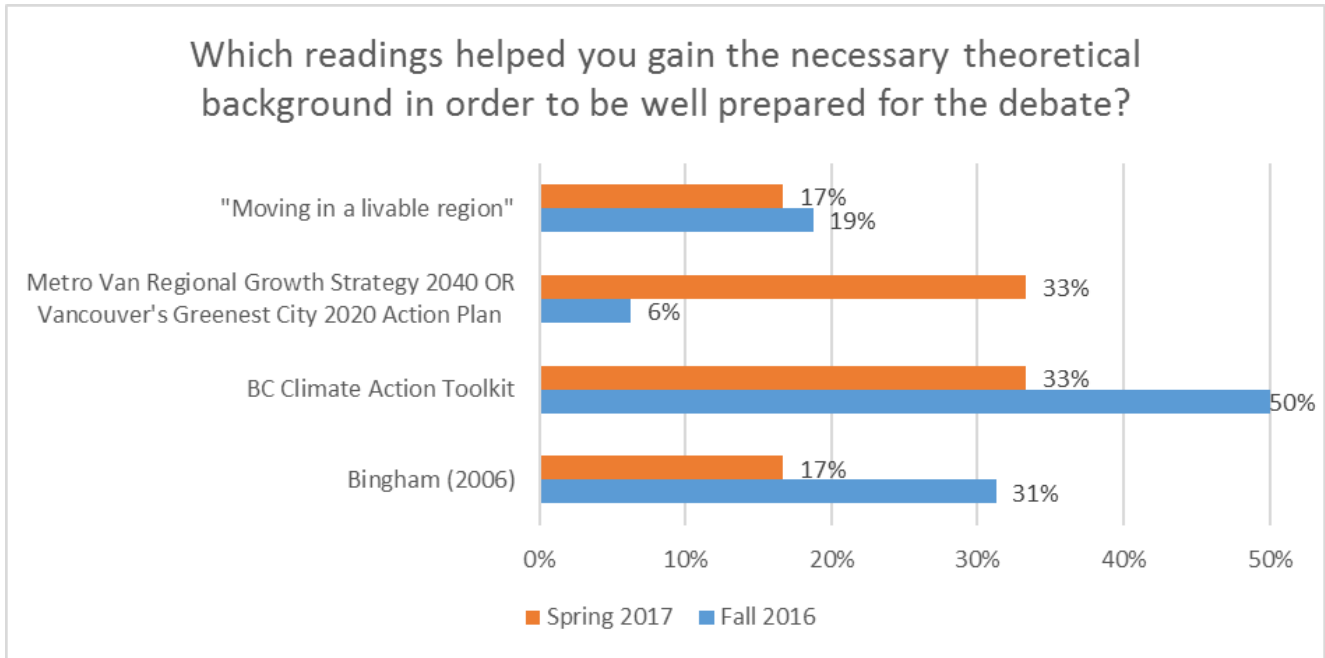


Graph 4:

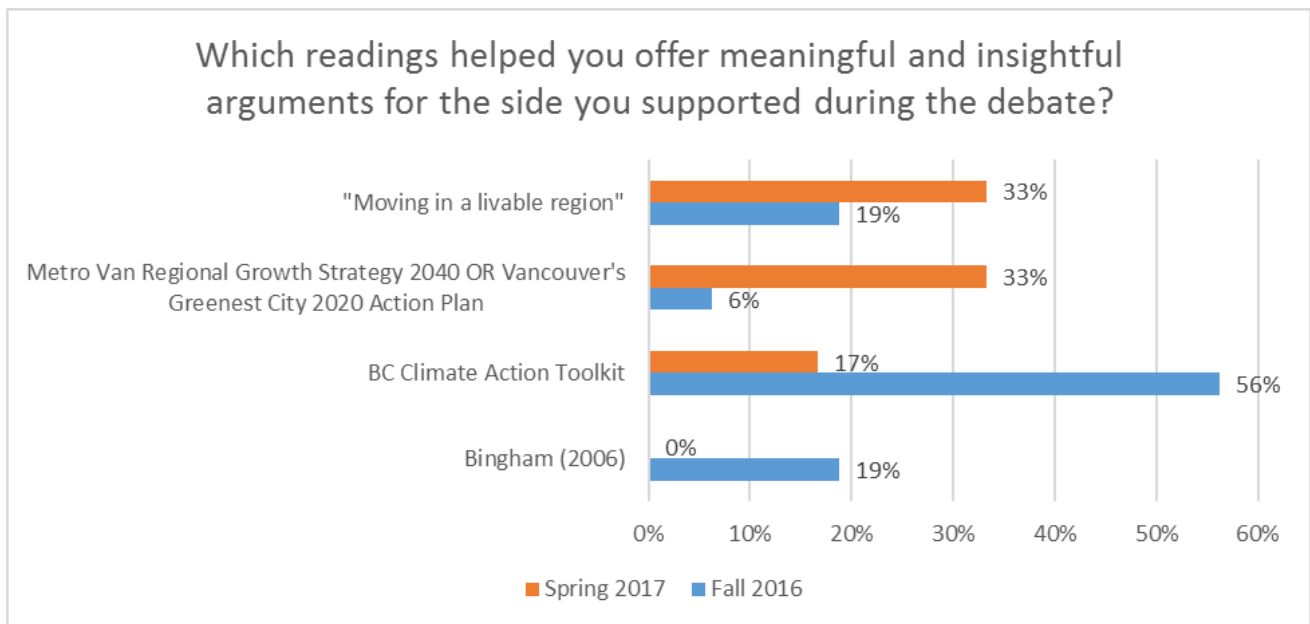


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Graph 5:



Graph 6:

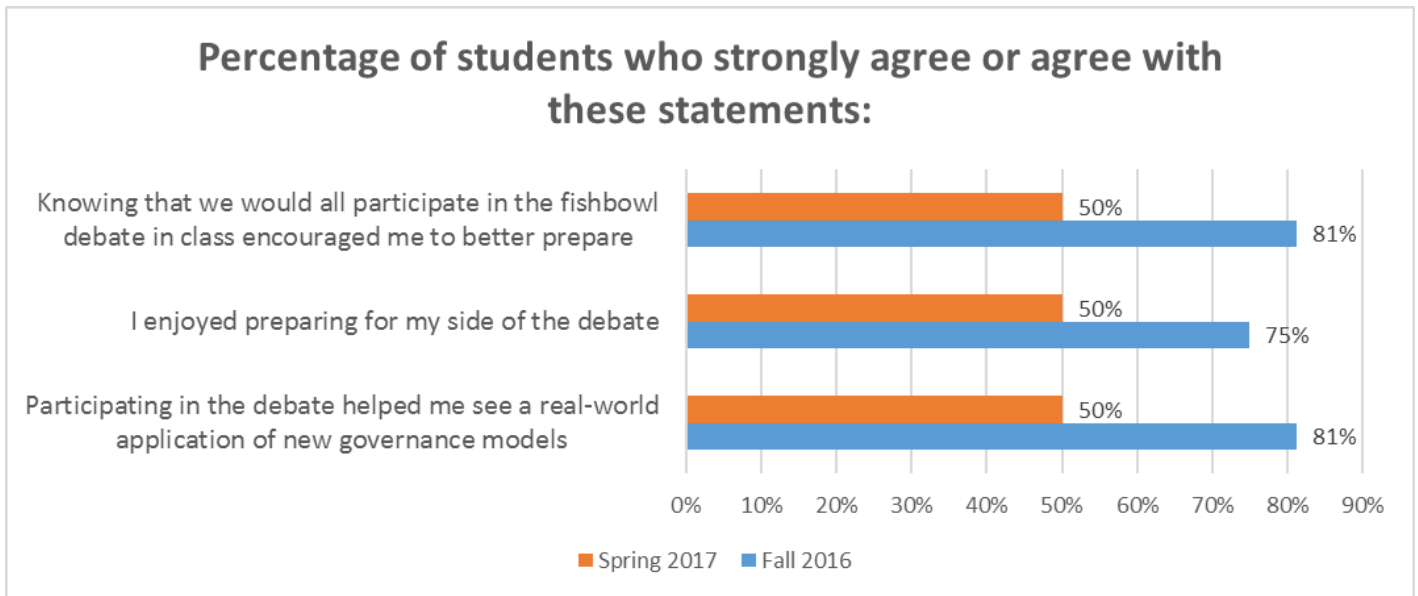


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Notes

Once again the number of students who completed the evaluation survey in the spring 2017 is very small (six students) and doesn't allow for reliable comparisons with fall 2016. However, we can't but notice that student opinions were split in the spring cohort, while more than ¾ of the fall cohort agreed on the usefulness of the fishbowl debate (graph 7).

Graph 7. Students who strongly agree or agree with the statements on the left, in the fall 2016 and spring 2017.



The TM's observations and comments on this activity corroborate the picture drawn from the graphs presented above. He pointed out that most students wrote their posts independently of what others had written and that "*a few students participated in actual debate*". Again, he suggested that clearer instructions are required.

Recommendations

In this case, we believe that this activity is not suitable for courses that are delivered entirely online. Although an online discussion in Canvas can offer a good platform for student debates, this particular type of debate is best delivered in the classroom or potentially through live webcasts. If the course is online only, then a variation would be to have students debate in small groups so that the discussion is carried at a deeper level and that students are able to "*better keep track of the conversation*" as the TM mentioned.

- **Activity 4 – “Double-tweet (poster) discussion”**

Adaptation

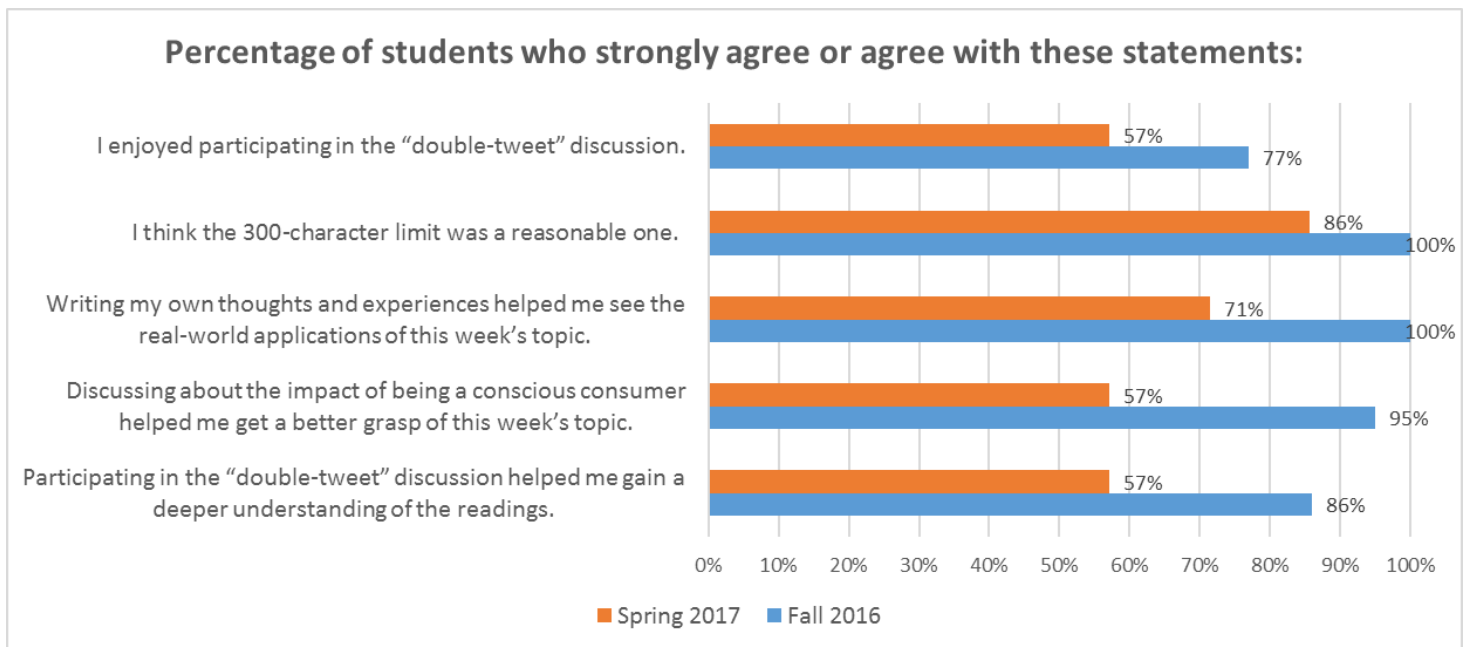
The “double-tweet” activity from the fall term was renamed to a discussion called "double-tweet about your poster" in the spring term so that its focus would be more in line with that week's module (week #11). Students had prepared posters based on another assignment, the profile of a sustainability practitioner, and they were asked to discuss their posters in posts that were limited to 280 characters each (like two tweets on Twitter). For this activity, they shared one major challenge they encountered

while writing the practitioner profile (one double-tweet post) and one major insight about the experience (another double-tweet post). They were also required to ask at least one question or provide a comment to at least two other class members with regard to their posters (again one double-tweet post each time).

Student evaluation

Although we received completed surveys from just seven students for this activity, the results are not favouring the activity much, particularly if we go on to compare the two cohorts (graph 8). Both classes discussed online, in Canvas, using the same format, but the in-person cohort (fall 2016) found the activity more enjoyable and more useful in increasing their learning and understanding of topic, readings, and real-world examples.

Graph 8. Students who strongly agree or agree with the statements on the left, in the fall 2016 and spring 2017.



Notes

This difference in perceptions between the two cohorts could be due to the fact that the spring 2017 students never met each other and it may thus have been more difficult to express themselves openly and freely enough so as to enjoy and benefit the most from this activity. As the TM observed, the discussion was “*overly positive and lacking critical review of each other's work*” which seems to justify why those who responded to the survey didn’t find this activity generally useful.

Recommendations

This activity seems to be highly dependent on the topic it tackles but also on the level of familiarity and comfort among the students. Were they to “double-tweet” about a topic or a case study that didn’t touch them personally (such as critiquing each other’s work), the discussion level would most probably be deeper and more meaningful.

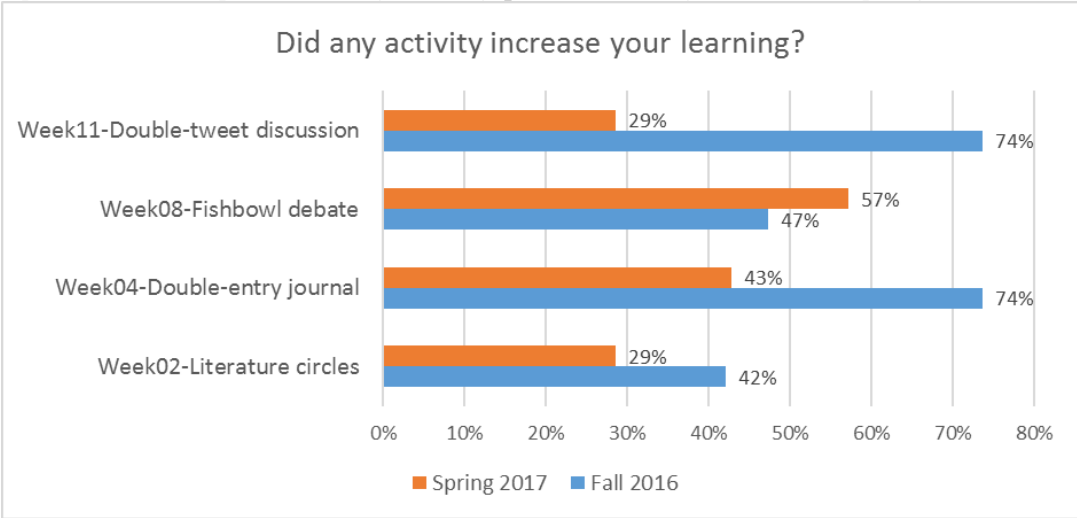
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- **End-of-course survey**

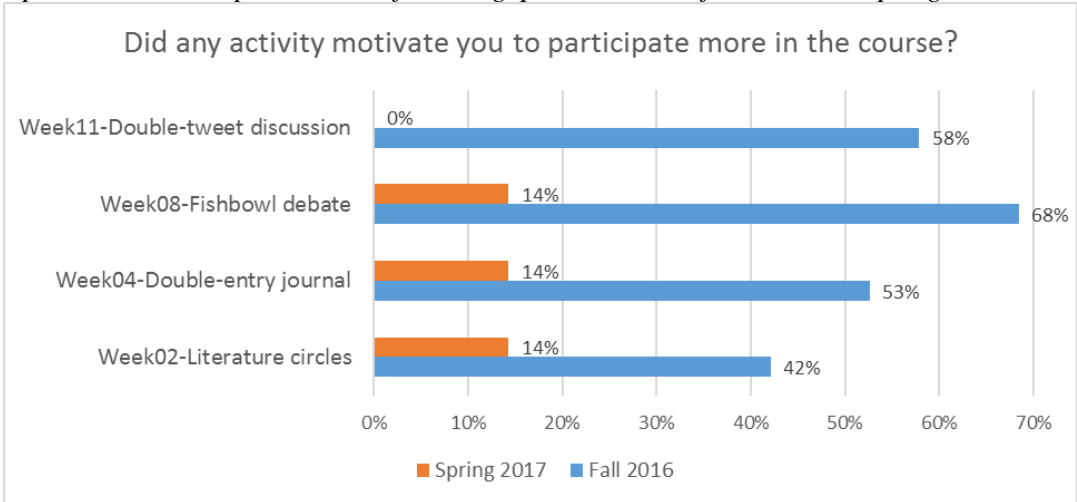
In the final evaluation survey, the number of students who responded was again quite small, only seven; however, the overall dissatisfaction with the activities is evident, as seen in graphs 9 and 10. Even if not compared to the fall 2016 cohort, fewer than half of the spring 2017 students found than any of the four activities increased their learning.

Most students offered positive comments: the requirement to consider their arguments and ideas in a concise way was helpful and made them “concentrate on the quality of their answers”; they had the opportunity to read “different perspectives” that “broadened their understanding of the topics” in the discussions and the debate; and assignments such as the double-entry journal helped them become more familiar with Canvas which would be useful in their other courses too. Other students stated that they prefer lectures over activities or that their activity answers were too superficial because of the word limits or that their only motivation to do the activities was to get the associated marks.

Graph 9. Student responses in the following question; in the fall 2016 and spring 2017.



Graph 10. Student responses in the following question; in the fall 2016 and spring 2017.



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3. Keyword description of project

Please define up to 10 keywords to be used to identify your project.

Learning activities; engagement with readings; student engagement; sustainability teaching and learning.

Part II – Implications and dissemination

1. Changes in my/our teaching:

Have you changed anything (or plan to change anything) in your teaching of particular courses or in general, because of your experiences in conducting this project? Please provide examples.

Based on the recommendations for each activity, we at the Centre for Sustainable Development plan to incorporate several changes or remove activities overall in the SCD 301 offering this fall. We will likely keep the “double-entry journal” (activity #2 of this project) and conduct it at a more regular basis in a way that it leads to a self-assessment activity or paper at the end of the semester. The fishbowl debate (activity #3) is a very interesting and useful learning tool as well, and we consider adjusting it further to the context and topics of our courses. We also intend to use the “double-tweet” (activity #4) as a tool that can allow students to exchange case studies and real-world examples of a specific topic, in an easy, quick and (hopefully) fun way. Finally, we plan to redesign the marking rubrics for each activity so that students understand that a higher level of thought is required and that a significant portion of the points are awarded for incorporating the readings into their answers.

2. Sharing findings with my/our colleagues:

We asked that you share information about your project with close colleagues either in a formal or informal way. How did you share your findings with colleagues?

We have already engaged in discussion within the Centre for Sustainable Development, the School of Resource and Environmental Management, and the Faculty of Environment, regarding the outcomes and learnings of this project – please refer to the next questions for additional details.

3. Impact of the project on my/our activities:

Have you become involved in other activities or projects (e.g., departmental committees, curriculum projects, other grant projects) because of your experience in conducting this project?

The experience in this project and the previous one have resulted in positive impact in our other activities and projects. As the Centre for Sustainable Community Development has just been merged with the Development and Sustainability Program to become the new Sustainable Development Program, we are currently in the process of redesigning some of the SCD certificate courses and we plan to continue using the knowledge and activities from our TLDG projects.

Additionally, this summer we are building on the multiple benefits from the TLDG projects as we work on another project funded by the Open Educational Resources (OER) grants. We are developing a database of sustainability-related OER and we match them with guides, worksheets, and other activities (including some from our TLDG projects) that can be valuable to any instructor within and beyond SFU.

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4. Publications and conference presentations

If you have presented your project at a conference or have a publication about your project, please provide the citation. We would like to accurately record and promote the work of project grantees.

Our team from this and our previous TLDG projects plans to prepare a short article presenting these projects and their results, to be posted in blogs about post-secondary teaching and sustainability teaching, as well as to be published in magazines such as *University Affairs*.

5. Future dissemination plans

Do you have plans for future dissemination of your project?

We intend to keep discussing our TLDG projects with colleagues at SFU and beyond as opportunities arise, in addition to planned publications such as those mentioned in question 4.

6. Students involved

If this project was implemented in a particular course(s), please list the course(s), semester(s) and approximate number of students in the Table below:

Course	Semester	Approximate number of students
SCD301 Sustainable Community Development Theory and Practice	Spring 2017	<input checked="" type="checkbox"/> 0-30 <input type="checkbox"/> 30-100 <input type="checkbox"/> 100+
		<input type="checkbox"/> 0-30 <input type="checkbox"/> 30-100 <input type="checkbox"/> 100+

7. Additional funding

Did you receive additional funding for your project, if so, how much and where from?

None.

Part III – RA involvement

We have ‘heard’ from a number of project research assistants that they very much valued their experience and the support provided. We would like to collect this feedback more systematically and have developed an anonymous survey for this purpose. We would like to send this survey link to the RA(s) who worked with you. Please provide contact information.

Name(s)	Email
Maria Spiliotopoulou	mariaspi@sfu.ca