

The Effectiveness of Using Student-Generated Materials in Class

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Peer teaching and student-generated materials are two techniques that fall under the umbrella of “collaborative learning.” These activities offer a host of benefits for students that can help them become better second language speakers and more autonomous learners. This paper will detail the “Worksheet Project,” an activity that integrates both peer teaching and student-generated materials. It will also discuss student reactions to the Worksheet Project, and offer analysis on how to improve future activities that employ peer teaching and student-generated materials.

Keywords: peer teaching, student-generated materials, collaborative learning

1. Introduction

Collaborative learning, where students work together to achieve a common task, is by no means a new idea. It is, however, an idea that has been gaining momentum here at Kanazawa Institute of Technology (KIT) in recent years. Specifically, many teachers are now implementing some variation of the Reading Circle method adapted by Ayako Hisatsune (2013), which requires students to work in groups and give presentations to their classmates about a reading from the textbook.³⁾ The study described in this paper is another evolution of the Reading Circle method that attempts to combine two collaborative learning techniques—peer teaching and student-generated material.

Peer teaching is defined as “...a suite of practices in which peers instruct each other in purpose-driven, meaningful interaction. Many programs feature older, more experienced peers, or those with a greater mastery in a subject area teaching younger, less-experienced peers or those who are yet to master the skills and content of the subject area (Bradford-Watts 2011).”¹⁾ In the case of this study, the peer teachers had similar English skills as their classmates, but had been given the teaching materials before their classmates received them. In this sense, the peer teachers had more knowledge about the subject matter than their “students.”

Like “collaborative learning,” the term “student-generated materials” can have a rather broad interpretation. It could be something as simple asking students to collect authentic materials that will later be used in class, as in Monti’s (2007) study.⁵⁾ On the other end of the spectrum, students can be required create enough material to actually design and teach a longer lesson, up to 45 minutes long in the case of Mennim’s (2012) students.⁴⁾

Regardless of exactly how one defines “student-generated materials,” it is clear that both they and peer teaching have numerous benefits for language students. Producing their own materials for class can “...allow learners to change from passive consumers of content to active co-creators in the learning process. This new role empowers learners and is associated with increased motivation and participation on the one hand, and improved problem-solving skills and learning outcomes on the other (Brown et al. 2013).”²⁾ Peer teaching has an even broader set of potential benefits, including

increasing competence in the subject area and helping students adapt to university life while becoming more autonomous learners. It can also improve confidence, self-esteem, team-working and leadership skills.¹⁾

With these benefits in mind, this paper will detail the “Worksheet Project,” describing its goals, subjects, implementation, student reactions, improvements for future projects like this one, as well as highlighting some possible dangers that teachers should keep in mind when using these techniques.

2. Method

2.1 Subjects

This study involved 86 KIT undergraduate students who were taking the English Seminar I/Basic English for Science and Technology course. The students consisted of approximately 40% freshmen, 12% sophomores, and 48% juniors.

2.2 Task

For this class, we used a textbook called *Essential Genres in SciTech English*. As the title suggests, this book introduces students to various genres of literature that have some relationship to science, technology, or some other realm of academia. Students studied the following genres: safety rules, question and answer facts, science feature articles, company websites, curriculum vitae, call for papers, and research paper abstracts.

One of the course objectives stated that students were expected to be able to recognize these genres in the real world. The goal of the Worksheet Project was to help bring this objective into reality by providing students with authentic representations of each genre. Students took a quiz about each genre. Rather than quiz the same material that was presented in the textbook, new, supplemental readings that closely mirrored the textbook material (same genre, similar length, vocabulary, subject matter, layout, etc.) were either created or adapted from existing materials. The students responsible for peer teaching the unit were given the supplemental reading ahead of time, and given one week to develop a worksheet based on it. The other students received the reading in class the day of the quiz and used it along with the student-generated worksheet to review the genre before the day’s quiz. Students were given 5–10 minutes to read the supplemental reading, then the worksheet that the peer teachers had made was distributed. The peer teachers took on the role of the teacher while their classmates were completing the worksheet, circulating through the class to answer any questions. Once the class finished one section of the worksheet, the peer teachers called on people to answer the questions so everyone could check their answers.

2.3 Worksheet Requirements

The Worksheet Project represented ten percent of the total grade. Students were encouraged to work in groups or pairs so that the workload was less of a burden, but due to small class and the number of genres being covered, some students had to work alone. In the end, 59 students worked in groups or pairs, and 27 students worked alone.

The worksheet needed three elements: vocabulary matching, true/false, and WH- questions. The number of each item that students had to write varied depending on whether they were working alone or in group.

Analysis of the student-generated questions occurs later in this paper. See Appendix 1–3 for an example of an original reading, and supplemental reading, and a student-generated worksheet.

2.4 Evaluation

As mentioned previously, the Worksheet Project accounted for ten percent of the total grade. Student were evaluated on five criteria worth two points each, for a total of ten points. First, two points each for having the required number of vocabulary, true/false, and WH- questions. Second, two points for bringing a draft of their worksheet to the teacher's office for correction. It was important that worksheets were not full of spelling or grammar errors, and also that they were organized in a way that would be easy for classmates to understand. Finally, two points for answering questions from their classmates and checking the worksheet's answers in class.

3. Survey Results

At the end of the semester, students were given a two-part survey to gauge their impressions of the Worksheet Project. The first part of the survey asked them about their experience creating materials for their classmates, while the second part dealt with their feelings towards doing using peer-generated materials. Full survey results are available in Appendix 3.

3.1 Student Attitudes Towards Making Worksheets

About half of the students had had some experience doing an activity "like this" in the past. "Like this" was defined as working in groups and helping their classmates gain a better understanding of an English text, akin to Hisatsune's reading circles. A clear majority said they would like to do a similar activity again (64%) and enjoyed working in a group (74.6%). Only 13.6% of students said they would have preferred to work alone. Unfortunately, nearly one third of the students reported having had some difficulty with their group members (30.5).

In terms of difficulty with the task of creating a worksheet, 65% of students thought the level was "just right," with nobody choosing "too difficult" as an answer. However, some further discussion of the work submitted by the students is warranted here.

For the individual question types, 64% ranked WH- questions as the most difficult to make, with true/false questions at 30% and vocabulary questions just 5.8%. This is an interesting result since when students brought their drafts to the teacher's office, the WH- questions were generally much better than the true/false questions. Perhaps they found difficulty in trying to construct grammatically correct questions from scratch. With the true/false questions, on the other hand, many simply copied a sentence from the text and changed a minor detail about it. While easier for students to compose, this type of question didn't require the reader to really understand the content of the text, but just to notice that some information was different without necessarily understanding the meaning of the sentence.

Unsurprisingly, the fewest number of students ranked vocabulary questions as the most difficult. The major issue with vocabulary questions was making sure students chose the correct Japanese word for the corresponding English word. For teachers who lack a command of Japanese, especially Kanji, special attention should be paid to checking vocabulary questions.

As for improving students' understanding of the genre and language from the textbook, 67% agree, while only 10% disagree. All in all, students had very positive reaction to this part of the Worksheet Project, whether they were working alone or in groups.

3.2 Student Attitudes Towards Using Student-Generated Materials

For this portion of the survey, students reported their impressions of using materials that were made and taught by their classmates, and also about their opinion of the supplemental texts. Again,

results were positive across the board. Nearly 80% of students said they enjoyed the experience. A large majority of students also thought that the Worksheet Project was a good way to review for quizzes, and that the worksheets and supplemental readings gave them an increased understanding of both the genre and the target language. Seventy-eight percent of students agreed that the difficulty level of the peer-generated worksheets was good.

As for the supplemental readings, 85% agreed that the difficulty level was good, and 20% strongly agreed that the readings were related to the genres they studied in the textbook.

4. Discussion

4.1 Areas of Improvement

Although the Worksheet Project was by and large a great success, there are of course things that should be improved in the future.

It would be interesting to delve deeper into the data and to try to elicit some different information from students. One question that should be investigated is whether there is a correlation between higher quiz scores and writing a worksheet, i.e. did students get a higher score on the quiz about the genre that they had made the worksheet for? It would also be interesting to analyze what kind of mistakes students made in their worksheet drafts. If common mistakes can be identified, they can be addressed to the entire class when the Worksheet Project is first being introduced. Finally, it would have been valuable to poll the students who worked alone to see if they would rather have worked in a group. Given that most of those who worked in a group preferred that arrangement, it would be interesting to find out how the students who worked alone felt.

Some improvements could also be made in the implementation of the Worksheet Project. The biggest disappointment was that the peer teachers were not as involved as I had hoped they would be. While their classmates were doing the worksheets, the peer teachers usually stood at the front of the class silently. Despite being encouraged to do so, their classmates rarely raised their hands to ask questions when they didn't understand something on the worksheet or in the supplemental reading. This is not surprising since the Worksheet Project turns the student/teacher dynamic on its head in a way that many university students may not have experienced in the past. As Mennim notes about Japanese education, "...most classes are teacher-fronted, concentrating on the written language and the deductive teaching of grammar. Learners in such a system have little experience in taking charge of their learning."⁴ In the future, more peer teacher—student interaction needs to be facilitated by the real teacher.

Another aspect of this project that should be reconsidered is giving the class the supplemental reading the same day as the quiz. Some students commented that it wasn't fair to test them on material that was not in the textbook. This complaint is not without merit, and at the very least it would be fairer to give all students the supplemental materials ahead of time, not just the worksheet writers.

4.2 Possible Dangers

It is clear that there are many benefits that result from both peer teaching and student-generated materials. That said, there are some potentially serious problems that could arise from these activities.

First, teachers must not place too much emphasis on their students acquiring teaching skills such as classroom management and how to write proper instructions. Whereas Hisatsune's version of the

Reading Circle method has obvious linguistic value in that there is an emphasis on presentation skills like pronunciation and eye contact, we must be careful once we start putting more of the onus of teaching as well as learning on our students.³⁾ This is a language class, after all, and oftentimes learning and learning to use the target language is a demanding-enough task for students. Especially at KIT, where the vast majority of students go on to work in engineering fields that have nothing to do with education, there is little practical value for them in learning even rudimentary teaching skills.

Similarly, teachers need to be conscious of the fact that they are still responsible for creating well-designed courses that ultimately fit their student's needs. We shouldn't embrace the attitude of "students doing all the work" too strongly.

Finally, to reiterate a previous point, peer teaching and student-designed materials are often a completely foreign notion to students, especially in Japan. That said, as the questionnaire indicates, students seem to enjoy the peer teaching experience even if it is new to them. Teachers should nonetheless be sure to adequately explain their expectations to students when introducing these activities, and provide students who are uncomfortable with the idea of being peer teachers acceptable alternatives.

5. Conclusion

With major advances in teaching theory seemingly a thing of the past, the most exciting innovations in second language acquisition are coming on the ground, in classrooms. Teachers are constantly finding new ways to engage and empower their students, and peer teaching and student-generated materials offer yet another way to accomplish these goals. The benefits outlined in this paper, along with positive student feedback to the Worksheet Project, suggest that it was a worthwhile activity that students enjoyed. As long as teachers are careful to make sure learning and using the target language is the focus of the lesson, as opposed to burdening students with too many tasks related to teaching skills, there is no reason peer teaching and student-generated materials can't play an even greater role in today's classrooms.

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Appendix 1 – Original Text from *Essential Genres in SciTech English*

General Safety Rules for Students

Always review the general safety rules before beginning an activity.

1. Never do any experiment without the approval and direct supervision of your teacher.
2. Always wear your safety goggles when your teacher tells you to do so. Never remove your goggles during an activity.
3. Know the location of all safety equipment in or near your classroom. Never play with the safety equipment.
4. Tell your teacher immediately if an accident occurs.
5. Tell your teacher immediately if a spill occurs.
6. Tell your teacher immediately if about any broken, chipped, or scratched glassware so that it may be properly cleaned up and disposed of.
7. Tie back long hair and secure loose clothing when working around flames.
8. If instructed to do so, wear your laboratory apron or smock to protect your clothing.
9. Never assume that anything that has been heated is cool. Hot glassware looks just like cool glassware.
10. Never taste anything during a laboratory activity. If an investigation involves tasting, it will be done in a cafeteria.
11. Clean up your work area upon completion of your activity.
12. Wash your hands with soap and water upon completion of an activity.

Appendix 2 – Supplemental Text Based on *Essential Genres in SciTech English*.

Safety Rules for Using Computers

1. Never open any emails if you don't know who sent them.
2. Always keep your anti-virus programs updated.
3. Never bring a liquid near a computer.
4. Don't go to dangerous websites because it is likely that they will have viruses.
5. Don't use the computer for too long. It can damage your eyes, and cause you to slouch.
6. Make sure your computer monitor is in a good position. If you have to look up all the time, you might strain your neck.
7. Use anti-virus software to scan your computer at least once a day.
8. Use an external hard drive to back up your computer data at least once a week.
9. Always choose passwords that aren't too easy. Never tell anyone what your password is.
10. Unplug your modem during severe lightning storms. If lightning strikes nearby, it could damage or destroy your modem.

Source: Adapted from the Internet.

Appendix 3 – Student-generated Worksheet Based on Supplemental Reading

Vocabulary questions

Slouch	・ 破壊する
Position	・ ウイルス
Strain	・ 位置
Liquid	・ 痛める
External	・ 前かがみ
Virus	・ 外部の
Destroy	・ 液体
Lightings	・ 少なくとも
Strike	・ (雷が)落ちる
At least	・ 雷

True or False

- ・ The more you use a computer , the more your eyes become better. T/F
- ・ You should not open any emails from unknown sender. T/F
- ・ We must get the latest anti-virus programs. T/F
- ・ You have to put the computer monitor on the floor. T/F
- ・ We must choose the passwords made of three numbers. T/F

WH questions

- ・ Who can get hurt from using the computer too much ?
- ・ What happens if you use the computer too much ?
- ・ When should you update your anti-virus programs ?
- ・ Where do you keep a password ?
- ・ When should not you open an email ?

Appendix 4 – Survey Results

Questions about writing worksheets

Question	Answer	Worked Alone	Worked in a Group	Total	Total %
		27	59	86	100
1. I enjoyed working with a group.					
	Strongly disagree		2	2	3.4*
	Disagree		3	3	5.1*
	Agree		44	44	74.6*
	Strongly agree		10	10	16.9*
2. I had problems working with my group.					
	Strongly disagree		17	17	28.8*
	Disagree		23	23	39*
	Agree		18	18	30.5*
	Strongly agree		1	1	1.7*
3. I would rather have worked alone.					
	Strongly disagree		18	18	30.5*
	Disagree		32	32	54.2*
	Agree		8	8	13.6*
	Strongly agree		1	1	1.7*
4. Writing the worksheet was...					
	too easy	1	0	1	1.1
	easy	5	7	12	13.9
	just right	12	44	56	65.2
	difficult	9	8	17	19.8
	too difficult	0	0	0	0
5. Writing the worksheet helped me understand the genre and vocabulary.					
	Strongly disagree	0	0	0	0
	Disagree	3	6	9	10.5
	Agree	16	42	58	67.4
	Strongly agree	8	11	19	22.1
6. I would like to do this kind of activity again.					
	Strongly disagree	1	0	1	1.1
	Disagree	7	12	19	22.1
	Agree	16	39	55	64
	Strongly agree	3	8	11	12.8
7. I have done this kind of activity before.					
	Yes	12	32	44	51.2
	No	15	27	42	48.8
8. Which questions were the most difficult to write?					
	Vocabulary	2	3	5	5.8
	True / False	9	17	26	30.2
	WH-	16	39	55	64

*Questions 1-3 were only asked to students who worked in a group.

Questions about using student-generated materials.

Question	Answer	Respondents (Total = 84)	Total %
1. I enjoyed doing work made by my classmates.	Strongly disagree	2	2.4
	Disagree	6	7.1
	Agree	66	78.6
	Strongly agree	10	11.9
2. Doing worksheets helped me understand the genre and vocabulary.	Strongly disagree	1	1.2
	Disagree	4	4.8
	Agree	63	75
	Strongly agree	16	19
3. The difficulty level of the reading was...	too difficult	8	9.5
	good	72	85.7
	too easy	4	4.8
4. The readings related to the genres we studied.	Strongly disagree	1	1.2
	Disagree	7	8.3
	Agree	59	70.2
	Strongly agree	17	20.2
5. Doing worksheets was a good way to review for quizzes.	Strongly disagree	1	1.2
	Disagree	9	10.7
	Agree	59	70.2
	Strongly agree	15	17.9
6. The difficulty level of the questions my classmates made was good.	Strongly disagree	1	1.2
	Disagree	8	9.5
	Agree	66	78.6
	Strongly agree	9	10.7

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