Engaging Learners with Team-Based Learning (TBL)

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Abstract

This paper introduces an action research project conducted at the Hirao School of Management during the 2019 Fall semester. The project involved a group of twenty-eight students enrolled in a Beer Industry Project (BIP) taught by the author, and aimed at investigating the effectiveness of augmenting a project-based learning (PBL) curriculum with team-based learning (TBL) elements. This report starts with some contextual background, goes on to offer brief outlines of PBL and TBL, and then includes a week-by-week overview of how each class meeting unfolded. Findings and discussion are then provided to evaluate the successes and shortcomings. It is hoped that this research might inspire others to experiment with PBL, TBL and other active learning approaches.

Keywords: TBL, PBL, Active Learning, Action Research, Learner Engagement

1 Introduction

Active Learning (AL) in undergraduate programs has been highlighted by the Ministry of Education, Culture, Sports, Science and Technology (MEXT) as an educational aim in Japan for over ten years (MEXT, 2008; MEXT 2012). The push to adopt AL approaches has been felt at universities throughout Japan, and Konan is no exception. One answer was to include project-based learning (PBL) at the core of the Hirao School of Management (commonly referred to as CUBE) curriculum since 2009 when our doors opened. Learners here are required to successfully pass five six-credit projects (four and a half hours each week for fifteen weeks) as well as an eight-credit graduation project during their four years at CUBE. The regular projects are registered in one or more categories (business, public, global), and at least two projects are offered in English each semester. One of the English projects that the author has been developing over the past ten years is the Beer Industry Project (BIP), which is registered as a business and global project. The BIP has been offered every other year and I have struggled with getting learners to engage with out-of-class assignments aimed at building foundational knowledge of the beer industry in the United States and Japan as well as the brewing process, beer styles and the global craft beer movement. The reading I had done on TBL highlighted the strength of this approach in this area, and I thus decided to experiment with adopting elements of a TBL approach in the BIP, specifically the readiness assurance tests and application steps (discussed below). This action research project also offered an opportunity to review the what, why and how of this instructional approach. Before describing how the course unfolded, I offer brief outlines of PBL and TBL.

2 Project-Based Learning (PBL)

Although the origins of PBL (or Project Method) as an approach to instruction remain a contentious issue (Knoll, 1997), there seems to be some consensus that we are talking about (a) a social constructivist framework, (b) active forms of learning, and (c) a balance of theory and practice. Buck Institute for Education (2019) defines PBL as "a teaching method in which students learn by actively engaging in real-world and personally meaningful projects" in which "students gain knowledge and skills by working for an extended period of time to investigate and respond to an authentic, engaging, and complex question, problem, or challenge."

The author offered the following overview of PBL at a two-day professional development workshop in December, 2017 for faculty and staff of the planned School of Interdisciplinary Science and Innovation at Kyushu University.

2.1 Key Principles: An instructional approach built upon AUTHENTIC learning activities that engage student interest and motivation. These activities are designed to answer a question or solve a problem and generally reflect the types of learning and work people do in the everyday world outside the classroom. Emphasis is on both the outcomes (product) and learning process.

2.2 Instructional Method: Background information is provided through lectures, guided readings, audio-visual presentations and research tasks. Project work is planned, organized and conducted by learners with varying degrees of instructor guidance and support.

2.3 Incentive: Involvement in authentic, real-life problem-solving activities and community work.

2.4 Role of the instructor:

- Orient learners to the goals of the project. Continually reinforce the goals
- Organize the project by defining the scope of inquiry and study tasks
- Provide learners with feedback and guidance when necessary

2.5 Role of the student:

- Contribute to project planning and execution
- Complete independent out of class research and project tasks
- Take responsibility for the process and product

3 Team-Based Learning (TBL)

Cynthia J. Brame (N.D.) defines TBL as "a structured form of small-group learning that emphasizes student preparation out of class and application of knowledge in class" and highlights that students "are organized strategically into diverse teams of five to seven students that work together throughout the class." At the same workshop mentioned above, Dr. Ruth Levine (University of Texas) outlined TBL as follows.

3.1 Key principles: Emphasizes APPLICATION of teacher- specified knowledge to address real world problems in autonomous teams. Students benefit from immediate feedback about their teams' solutions.

3.2 Instructional Method: Learners come to class prepared to demonstrate knowledge of contents through "readiness assurance tests" first as individuals, then as teams. Learners then apply knowledge in challenging application problems in intra and inter-group discussion.

3.3 Incentive: Performance on readiness assurance tests, peer evaluation, and ability to discuss application activities. Preparation for an end-of-course exam.

3.4 Role of the Instructor:

- Prepare objectives designed for application of knowledge
- Prepare application activities which will be challenging and will stimulate meaningful group discussion
- Design readiness assurance tests which will ensure students have the knowledge necessary to engage in the applications
- Find or create materials to prepare students for readiness assurance tests
- Facilitate teams of students in intra- and inter-team discussion, clarify concepts and provide feedback when necessary

3.5 Role of the Student:

- Do independent out of class study prior to coming to class
- Contribute to team discussions
- Defend individual and team solutions in class
- Contribute to peer evaluations

Although I have been aware of TBL for some time now, it is only recently that I have experimented with designing content-focused language learning lessons around this framework. The component that most appealed to me was the readiness assurance tests (RATs). A major challenge in our program at CUBE is the wide range of learner proficiency levels, and projects taught here normally require a certain amount of both conceptual and procedural knowledge. Another challenge has been getting learners to take their out-of-class assignments seriously. TBL addresses both issues and I present here how I have designed elements of TBL into the beer industry project.

4 The Beer Industry Project

Similar to other projects that I supervise in our program, the beer industry project starts with foundational knowledge that will help learners later in the project. Specifically, learners are introduced to (1) historical developments in the beer industry in the USA by viewing short segments from a documentary film, (2) procedural and structural changes at the four main beer manufacturers in Japan through a case study reading, and (3) an overview of the craft beer

movement in Japan and around the world via internet research. The most recent iteration of the project (Fall, 2019) unfolded as follows.

Day One

(a) Welcome Message - First, I wanted to welcome students and convey that this was the fifth time to teach the project, that this was one of my favorite projects to teach, that the project would be challenging (but hopefully enjoyable), that both content and process would be stressed in this project, and that we would be experimenting with a new teaching approach (TBL).

(b) Individual Readiness Assurance Test (iRAT) - I wanted students to experience both individual and team RATs. For content, I asked students to take notes while watching a short animated film outlining the beer making process, and then reading the course syllabus (https://tinyurl.com/bip-course-outline). After watching, students took a practice iRAT.

(c) Logging into Moodle & Forming Teams - For this and other projects, I use the LUCKS Moodle (https://els.konan-u.ac.jp/moodle3/) as a course management system. Learners were instructed to login to the site and enrol themselves in the Beer Industry Project (Fig. 1). Then, I informed them that we would form five teams that would be used for the entire semester.

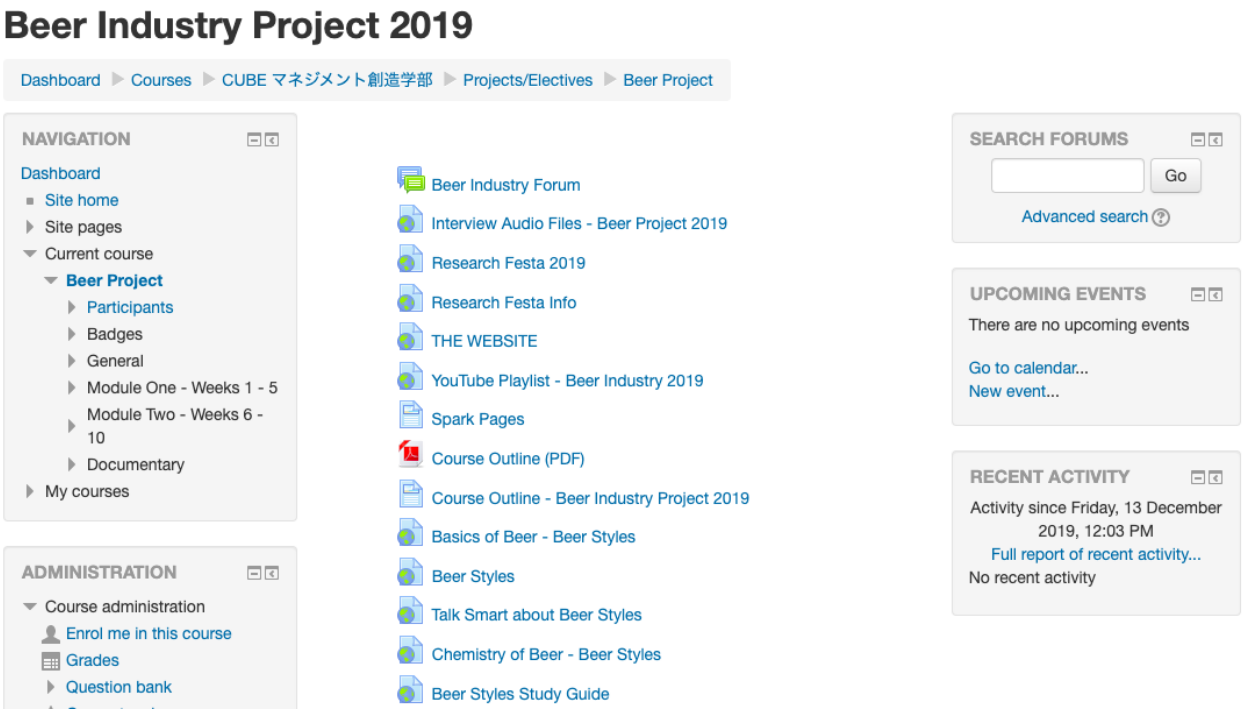

Figure 1. Beer Project on LUCKS Moodle Site.

(4) Team Readiness Assurance Test (tRAT) - After a short break, teams were assigned by student number. In this way, each team had at least one member from each grade level (2nd, 3rd, 4th) and one member from each program (management and study abroad). Teams then completed the practice tRAT, after which teams answered each question in turn by raising Alphabet Cards (A/B/C/D) with their first and second choice of answers. For each question, I gave the correct answer, and groups received three points if that was their first choice and one point if it was their

second choice. I also highlighted for learners how the test items reflected key concepts and information from the video and course outline and why certain answers were correct or incorrect. In the follow-up debriefing session, I also pointed out that the lowest team score was higher than the single best individual score, and that this is one of the special characteristics of TBL (Michaelsen, Watson & Black, 1989).

(5) Group Negotiation of RAT and Application Weightings - At this point, I outlined for learners all of the in-class and out-of-class assignments and told learners that we would negotiate the relative weight of each component. I also announced that each individual would assess the contribution of each team member at the end of the project (Michaelsen, Knight & Fink, 2004). The negotiated weights for each component were as follows: iRATs (x 6) = 10%, tRATs (x 6) = 30%, application of knowledge = 40%, final reflection = 10%, peer evaluation = 10%.

(6) Beer in the U.S. Documentary - The final in-class activity for our first meeting was to watch part one of a six-part documentary and take notes. Students compared their notes and the instructor highlighted useful or challenging English words or expressions. We watched the video a second time and then compared notes across all teams.

(7) Out-of-Class Assignment - The third ninety-minute session for projects at CUBE is set aside for fieldwork or student-led activities. For this first class, this time was spent individually watching part two of the documentary and taking notes. Students were told that they would take their first graded iRAT and tRAT the following week, and that questions would come from parts one and two of the documentary.

Day Two

(a) iRAT and tRAT #1 - The same procedure outlined in day one was used to administer a 10-item multiple choice test covering information in parts one and two of the documentary (https://tinyurl.com/um5jcxm). The one adjustment for day two was to prepare answer sheets using ZipGrade software (ZipGrade, 2019). While teams were completing the tRAT, I scanned the completed iRATs. Again, when scoring the tRAT I stressed how the test items reflected key concepts and information from the documentary, and explained items which teams seemed to be confused about.

(b) Application #1 - The first application of knowledge was to plan and prepare a one-minute video explaining the brewing process. The deadline for submission was explained as the end of Day Four.

(c) Beer in the U.S. Documentary - We watched part three of the documentary and students were asked to take notes. Students then compared their notes and I again highlighted useful or challenging English words or expressions as well as highlighted key information and concepts. We watched the video a second time and then compared notes across all teams. Part four of six was assigned as out-of-class preparation for RAT#2 on Day Three.

(d) Project Time - The third ninety-minute session of the day was spent discussing and planning Application #1. Teams were required to record in written notes any decisions or progress that they made.

Day Three

(a) iRAT and tRAT #2 - This RAT included ten multiple choice questions and five true-false questions. Again, I used the ZipGrade site to print answer sheets and scanned the completed iRATs using the smartphone app.
(b) Project Time - A significant amount of time on Day Three was spent working on Application #1. I checked in with each group and clarified the requirements of the assignment, specifically that each stage of the brewing process needed to be included and each member needed to record their voice on the video.
(c) Beer in the U.S. Documentary - We watched part five of the documentary and students again took notes as well as compared their notes. Part six of six was assigned as out-of-class preparation for RAT#3 on Day Five.
(d) Documenting Progress - Starting on Day Three, teams were required to include formal meetings in their group work (including determining an agenda, deciding roles and responsibilities, and taking minutes). Progress reports were uploaded by one member of each group into a Forum that I set up on the LUCKS Moodle site.

Day Four
(a) Project Time - With no RAT on the schedule and the submission deadline looming, a significant amount of time was again spent working on Application #1. Most groups were recording and/or editing their video, and I answered several questions regarding appropriate English expressions.
(b) Introduction to Module Two - I interrupted students in the middle of their project time to explain that Module Two would center around a Case Study written by Tim Craig (1995) on the Japanese Beer Industry and the huge shift in new product development in the 1980s. I uploaded a PDF version of the reading to the LUCKS Moodle and informed learners that they could (and should) get a head start on reading the case study.
(c) Uploading Application #1 - The final task for this day was to put the finishing touches on the one-minute video (brewing process) and share via the CUBE YouTube channel.
(d) Application #2 - Teams chose one of five regions in the U.S. to investigate and we brainstormed a list of minimum information that each team would need to find for their region.

Day Five
(a) iRAT and tRAT #3 - The twenty multiple choice and ten true-false questions covered key information from all six parts of the documentary but was focused mainly on parts five and six.
(b) Application #1 Peer Evaluation - Students were directed to a YouTube playlist (https://www.youtube.com/playlist?list=PLjffsySHV29PbwbOtxtNujc6mihEs-pOZ) that include the one-minute videos for all teams. Each team was responsible for watching and evaluating two other teams using the evaluation sheet in Appendix 1.
(c) Application #2 Research - Teams decided individual roles and began researching their region. A few items were deleted from the minimum list because of the lack of accessible information.
(d) Documenting Progress - Teams again held formal meetings and uploaded progress reports to the Forum on Moodle.
(e) Case Study (Module 2) - Teams began reading and discussing the case study. Quizzes and tests from previous years were provided as a reading guide.

Day Six

(a) Case Study (Module 2) Mini Lecture - An overview of key information from the introduction and first four exhibits was presented using Google Slides. This was followed by a question and answer session. Teams were then asked to find eight to ten pieces of information in the reading that they thought would be tested.

(b) Application #2 Research & Planning - Teams shared their information and began planning the layout/organization of a Spark Page (Adobe, 2019).

Day Seven

(a) iRAT and tRAT #4 - This included ten multiple choice and ten true-false questions covering the first section of the case study. Particularly difficult items were explained during the tRAT check and in a short debriefing session after all scoring was completed.

(b) Application #2 Preparation - Teams again shared their information and continued working on their Spark Page. Advice and encouragement was provided as needed.

(c) Case Study (Module 2) - Key information from the middle section of the case study was highlighted for students using Google Slides.

(d) Documenting Progress - Teams again held formal meetings and uploaded progress reports to the Forum on Moodle.

Day Eight

(a) iRAT and tRAT #5 - This included fifteen multiple choice and ten true-false questions covering the middle section of the case study. Particularly difficult items were explained during the tRAT check and in a short debriefing session after all scoring was completed.

(b) Application #2 Presentations & Peer Review - Each team presented their completed Spark Page, with each individual responsible for their contribution. The audience completed an evaluation sheet for each of the other teams as well as their own team (self evaluation).

(c) Case Study (Module 2) - Key information from the final section of the case study was highlighted for students using Google Slides.

(d) Guest Speaker Preparations - Teams prepared questions for the guest speaker on day nine.

Day Nine

(a) Guest Speaker - Chris Poel, the former head brewer at Baird Brewing, spoke about his experiences at Baird and his preparations for opening his own brewery Shiokaze Brew Labs. Students

(b) Case Study (Module 2) - Teams reviewed the previous two RATs and prepared for the final iRAT and tRAT on Day Ten.

Day Ten

(a) iRAT and tRAT #6 - The same procedure was used for this final RAT. Screenshots of the test key, graded papers and item analysis are shown in Figure 2.

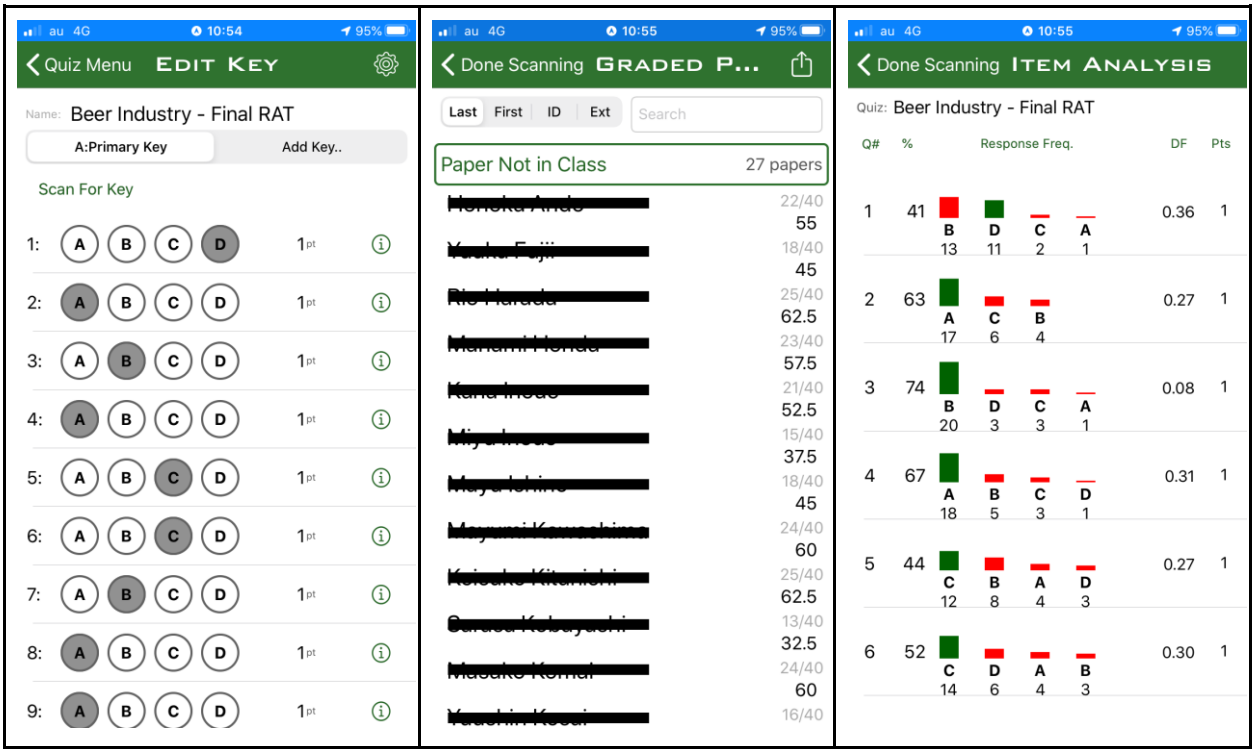

Figure 2. Screenshots of test key, graded papers and item analysis.

(b) Craft Beer Module Introduction (Module 3) - An overview of the final module was presented, including the final three applications. Each team would be responsible for choosing a craft beer brewery in the Kansai region, researching this company, and preparing a company profile, a poster presentation, a PechaKucha Night (PKN) slideshow (PechaKucha Night, 2019), and presentation transcripts.

(c) Initial Research (Module 3) - Teams perused back issues of Japan Beer Times (2019) and conducted internet searches for information on newer Kansai area craft breweries. Each team then discussed which breweries they were interested in and proposed their final choices to the advisor. Most teams were able to have their first choice, but some teams were guided to second or third choices which had not been researched in previous years, would be easier to research, or were in some way more appropriate.

(d) Progress Report - Toward the end of the day each team prepared a short progress report and uploaded this to a Progress Report Forum on Moodle. Included in the reports were details regarding who would be responsible for which part of the research.

Day Eleven

(a) Craft Beer Module Applications - Students shared their research and began planning their company profiles, posters and PKN presentations.

(b) Progress Report - Toward the end of the day each team presented the progress they made and what still needed to be done. This presentation was audio recorded and uploaded to the Forum on Moodle.

(c) Documentation - Again, each team documented their progress and uploaded together with the audio file mentioned above.

Day Twelve

(a) Craft Beer Module Applications - Students were instructed to have their first meeting of the day and discuss/decide who would be working on which application (profile, poster, PKN slideshow, transcripts).

(b) Progress Report - Toward the end of the day each team presented the progress they made and what still needed to be done. This presentation was audio recorded and uploaded to the Forum on Moodle.

(c) Documentation - Again, each team documented their progress and uploaded together with the audio file mentioned above.

Day Thirteen

(a) Finishing Touches - Teams spent the entire class revising and polishing the three applications (profile, poster, PKN slideshow) for the craft beer module.

(b) PechaKucha Night - Two of the groups presented at PKN Nishinomiya #42 on the 5th floor atrium at Konan CUBE. The audience consisted of both students, faculty and visitors from other Kansai area universities and the general public.

(c) Research Festa 2019 - Four members from one of the groups presented posters at this school-wide event on December 22 (Sun). Two of the students presented a profile of the Osaka company CRAFT BEER BASE, while the other two students focused on the brewery opened early in the year by this same company.

Day Fourteen

(a) Poster Presentations - Four of the five groups set up their posters in one corner of the room, and each member of those groups presented while the audience rotated around the room to listen to each presentation. The last of the five groups presented their poster at the Konan Research Festa 2019 (mentioned above)

(b) PechaKucha Night Style Presentations - Three of the five groups presented their company research using the PechaKucha Night format (20 slides x 20 seconds each slide). The other two groups presented at PechaKucha Night Nishinomiya - Volume 42 (mentioned above)

(c) Peer Assessment - Students worked individually to evaluate (https://tinyurl.com/bip-evalsheet) the work of two of the other groups on the company profile, the poster presentation and the PechaKucha Night style presentation.

(d) Peer Evaluation - Students worked individually to evaluate (https://tinyurl.com/bip-peereval) the contribution of each of their group members. This is a key component of the TBL approach, and will account for 10% of overall grades.

Day Fifteen

(a) Final Documentation and Uploading of Applications - The final activity was to upload all artifacts (e.g. PKN slides, transcripts) and documentation to the Moodle site.

(b) Course Reflections - Students completed a questionnaire (https://forms.gle/AMGppryqDwsm2LbV6) asking about what they learned during each phase of the project.

(c) Future Vision - A classroom discussion was held regarding how students might use the knowledge and skills from this course in other courses, their graduation project and adult life.

5 Findings and Discussion

So, how successful was the inclusion of TBL elements in the project? I will discuss three sources of data that will help me evaluate the successes and shortcomings. First, I offer my own observations as objectively as possible. I then review student performance on the final RATs for both module one and two. Finally, I present some of the more revealing comments from the final reflection activity.

My own observations revealed some improvements over previous years, but many of the same challenges seem to remain. First, the discussions that groups had while taking the tRATs were encouraging. Students seemed truly invested in sharing with and learning from their team members, and discussions were sometimes quite animated. Keeping the same groups throughout the project is a key strategy in TBL, with trust and mutual reliance building over time. I observed this as working in three, possibly four, of the groups. One group, however, was never able to reach those higher levels of trust and reliance. The personalities and lack of investment in the project seemed to negatively impact the group dynamics from day one, and they were never able to overcome these issues. Two of the other groups had members who did not actively contribute to team endeavors, but those groups were able to overcome this challenge.

I have mixed feelings about the RATs. Although some individuals and groups benefited from this approach, a significant number of students seemed to perform poorly. What is not clear is whether or not these individuals were making serious effort in interacting with the videos and/or assigned readings. As for RAT results, there were signs of deeper learner engagement compared to previous years when I used standard quizzes and tests (i.e., T/F, multiple choice, fill in the blank, and short answer items). However, the range of individual scores hints at lingering challenges with getting learners to engage with foundational knowledge (Fig. 3).

iRAT #3 (Module 1)

Number of Papers:	25
Number of Questions:	30
Possible Points:	30

	Score	Percent
Minimum	11	36.7
Maximum	27	90.0
Average	20.0	66.8
Median	20	66.7

iRAT #6 (Module 2)

Number of Papers:	28
Number of Questions:	40
Possible Points:	40

	Score	Percent
Minimum	13	32.5
Maximum	34	85.0
Average	21.6	54.0
Median	22.5	56.2

Figure 3. Overview of results for the final iRATs for modules 1 & 2.

Of particular concern are the minimum and average scores for both tests. Individuals did slightly better with the documentary (module 1) than the reading (module 2). The teams scores

were better but also warrant concern. Again the scoring for the multiple choice questions on tRATs differed in that teams could declare the first (3 points) and second choices (1 point). The minimum, maximum and average scores for RAT #3 and RAT #6 are shown in Table 1.

Table 1. Team Readiness Assurance Test Results

	tRAT #3 (Module 1)	tRAT #6 (Module 2)
Minimum (%)	61/80 (76.25%)	43/80 (53.75%)
Maximum (%)	73/80 (91.25%)	64/80 (80%)
Average (%)	69.4/80 (86.75%)	55.6/80 (69.5%)

One explanation for the lower scores and percentages on the final tRAT for Module 2 was that this test was comprehensive (with questions from earlier sections of the case study), while the earlier one focused mainly on parts five and six of the documentary. Still, these low scores warrant further investigation and may indicate that the case study requires more scaffolding or support.

Moving to the online reflections, I present here some of the more salient comments from sections dealing with skills learners felt they developed in the project and impressions of how well they felt their groups functioned. One of the questions on the online reflections questionnaire was "What skills did you develop during this project?" Most of the responses fell into one of three categories: researching skills, cooperation, target language. All quotes are verbatim from student responses.

5.1 Researching Skills

Several students mentioned that the project pushed them to develop their skills at finding and analyzing key information at each stage of the project.

> *I was not good at researching. However, in this class, I looked up many times about beer, and I learned about how to research effectively. This experience made me a good researcher. (Female, 3rd Year)*

> *The ability to gather information in other way, to combine the information. I was bad at gather information, and combine the information. It takes a lot of time, and I have to concentrate on this work a long time. So, I couldn't do well. But after finishing this lesson, I thought I can do it. I noticed the change of me. I didn't hate so much. It is big change for me. And also, I gain the concentrate ability. Gathering information need concentrate a lot. I can concentrate one thing longer time compared to before this lesson. (Female, 2nd Year)*

> *We have to a lot of information about craft beer during this project. For example, the process of creating craft beer, U.S.A craft beer, and Japanese breweries. At*

first, it is difficult to research their information for me, because I was not used to research a lot of information with English. Also, it was hard to catch important information. However, thanks to various task during this project, I could improve my research skill. (Male, 3rd Year)

When I studied about Beer industry such as distribution and liquor tax in North Central Area America. I knew the it was important to know the historical background and laws of the region. Because I want to do related trade work such as Importation in the future, studying about other country's information by using web sight and some books is good experience and it makes my searching skill. And also, visiting and hearing Brewer's story is also useful for me to improve my interview skill. Interview is need to know market. So, I thought this experience will connect my future's job. (Female, 2nd Year)

5.2 Cooperation/Teamwork

The following comments highlight both the challenges and value of working with others. The last comment highlights how the project stretched some students in terms of leadership skills.

I personally developed my skills about finding something that my group is not good at and cover it by myself. Find something that other members of group and do that task instead of doing something that I want to do the most. It worked out very well in this group. (Male, 4th Year)

The first thing what I developed is that cooperation skill. I had a lot of team assignment. In my school life, I had a lot of individual assignment, so it was fun to do something with my teammate, but at the same time, it was difficult to do something with my teammate because I need to care and help. (Female, 4th Year)

Before this project, I prefer individual work. through this project, my team member helped me many times and I felt to make the best things, I should not work alone. (Female, 4th Year)

I learned it is important to communicate with team members and act positively. At first, our team did not talk to each other. So we could not discuss to create a good presentation. I tried to talk with team mates more even though it is not related to project. These actions makes relationship with them close. Then I felt team is closer by increasing the talking. (Female, 4th Year)

I developed leadership very much through this class. At the beginning, I did do almost everything of our assignments. Gradually, it became tough for me to do everything by myself. Then I tried to ask some help for my teammates. Since my group members are so flexible and capable, it was easy to give some tasks for them in the class. However, they seem not to have consistency and concentration. So that

was really difficult to give some task outside of class. How to deal with that problem was watch carefully how they work during the class through communication or pair work. Each person has potential and something they are good at. I tried to find their real abilities. Then I distributed the job for each of them in different way. I didn't say just "Do it this until next week". What I did was like "You research about this section so please continue to do your domain. It is easier to start new thing, isn't it?" or "You are really good at dealing with data, so I am gonna handle with script, so can you collect interesting data to write?" or something like that. During the class, to be the good leader for my teammates, I tried to entertain and motivate them. Each person has different interests or sense of humor so basically it was really hard . . . I encouraged them through LINE too. If they seem to forget something to do, I always texted them nicely and clearly. Through this project, I really care about other team members. I hope they liked me as a leader, but I am pretty sure my leadership skill has been developed a lot. (Male, 3rd Year)

5.3 Target Language Skills/Confidence

As the following quotes show, several students felt the project pushed them to develop their English language skills and/or highlighted for them the need for further improvement.

My listening skill was developed. Since 3rd semester, I didn't take any English class. In this time, it was good for me to take this class. On the other hand, speaking skill is not developed. People around me can speak english well. I surprised that. I thought I need to study English to become like my seniors. (Female, 3rd Year)

I develop skills of speaking and reading English. In my class and group, most people are older than me. Their English skills are wonderful. At the beginning, I can't talk with group member. However, in this project, I can listen to VERY beautiful English of Senpai, and I copy Senpai English, then I think that I can speak better. (Male, 2nd Year)

Reading skill. It's because we read so many materials for t-rat and i-rat. Also, I built up vocabulary, so I develop my reading skill. (Female, 3rd Year)

Summarizing with English. I was not good at summarizing with English own words after reading or listening, but I could learn it on video learning and on document during this project. I could develop on note-taking from some documents and after that, I could get some skills of summarizing and making power points. (Female, 3rd Year)

Listening and reading skill. I can't listen well when non-clearly-speaker is speaking because I've learned English only from teacher who speak English clearly. In this class, we watched some videos including I'm not good at listening.

By listening over and over, I think I grew up little bit. I'm also not good at reading long resume written in English. By reading over and over, I think I grew up little bit too. (Female, 3rd Year)

I think I could gain the English knowledge not only speaking, writing, reading and listening but also the way to study for the exam like I mentioned on the first question and in addition, I could develop new academic knowledge including the speciality vocabularies. For example, studying the process the brewing there were many vocabularies I have never heard such as hops, grains, malt and so on. When it comes to study the breweries in America and Japan there were more specific business vocabularies micro, birthplace and renaissance. Additionally, this course was more difficult for me to understand and get the detail informations about the whole action we should do in a day or outside of class than English class I took on the first grade. Still now I'm trying to try to get informations as much as possible but sometimes cannot but I think I got a little general idea the way to keep up with everyone at the environment with foreign language. (Female, 2nd Year)

5.4 Team Functioning

The other area of interest was how learners viewed the teamwork. The prompt in the online reflection questionnaire was, "Explain how your team (group) functioned." The following responses touch on both positive and negative sides of having learners work in groups.

Again everyone had different types of strength but they were all hard workers so I wanted to be like an outsider just because to pick up some difficulties that they were having or something that I could do easily but not them. I think it worked out very well and everyone did a great job. (Male, 4th Year)

We always try to spread work. Each person did different task. It was quite worked well. However, we should share information more. Sometimes, we could not finish our task because we didn't know which member did which task. If we have chance to work in our group again, I want to share more information carefully. (Female, 4th Year)

We decided each members' role, and worked effectively. Sometimes we had trouble, but we figured out how to resolve. (Female, 3rd year)

The work went smoothly because everyone had expressed their opinions, but the survey should be more specific. I think most of our presentation were basic information. (Female, 2nd year)

Our group was said to be worst group because lacking of communication and quality of everything. However, it is not always true. I think we had trouble sometimes, but I can not say it is always. We discussed about research many times.

As a result, if you feel our group seems awful, I am very proud of doing with my group member.I worked as a powerpoint maker, leader sometimes, in my group. I thought I could help sometimes and I was helped by themselves sometimes. (Male, 3rd Year)

Sometimes, I worked as a supporter. For example, I gather some information. Also, I translated some sentences. Sometimes, I worked as a leader. I tried to make it clear what should we do now, what should we do by next week. It might be small thing, but I hope it worked well to progress our work efficiently and smoothly. (Female, 4th Year)

We always divided our work equally, and shared the information that each got. We helped each other when somebody's got stuck, and each did what she wants to do, so I think we could have a good team work. What I think we didn't do well is that sometimes there are some members who loves to talk, so it took a long time to finish some tasks. (Female, 3rd Year)

Our team leader was [name], so he showed the process of working. And then we could cooperate and finish our working. But I relied too much on [name]. We should contact each other more. (Female, 2nd Year)

We could separate works and did well at the same time. It was great. I think we couldn't share the information deeply, so we didn't really know if other member were doing well. I think that is the point of improvement. (Female, 2nd Year)

My team function was very good and cooperative. It cause that we could get high score in t-rat. Also, poster and Pechakucha presentation went well. (Female, 3rd Year)

All of us are always tried to do something. When someone told to make poster, other one start to find picture. Others also start to make power point. We are always laughing. Even I made mistake, they made me smile. I think we could cooperate well. (Female, 3rd Year)

We worked all tasks with all of group members. Thanks to good team members, we could split jobs, and we worked every task very smoothly. We could make up for members' shortcoming each other. On the other hands, we couldn't do interview to the brewers. If we asked to brewers many times, we could do that, so we hope to improve our negotiation skill. (Male, 3rd Year)

Our team consisted of second, third and fourth year students. Most of team members were friendly so they were easy to communicate each other well through line when we have to do some work outside of the class. When we do our work at

home, we divided into some part that we have to do. However, we didn't make PowerPoint creatively and looks beautiful. (Female, 3rd Year)

I think everyone did good. We helped each other. We could do works by gathering each strong point. When spark page gone by mistake, we made it again with no anger. When someone can't do work well, other helped. I think our team was good team. (Female, 3rd Year)

Our team had a lot of communication. We never had fight or trouble. Basically we had fun with any hard work. We always separated what we research. We had good research skill. But sometimes it is hard to find something to do. At that time, we had close conversation. That was really easy for me to work with. But they didn't have consistency so it was little bit hard to let them keep concentration. But once we concentrate on something, our work became really efficient. (Male, 3rd Year)

I think we worked very well on each presentation and poster presentation and pecha kucha night as well. We basically divided the role for each such as the place/area we should research and decide the deadline for it. We also made sure to contact the member who is absent messaging what we did during the class on group line chat. When we faced with IT technical problem or who is going to cover for the absent member we discussed and try to do our best. However, I do not think we could not cooperate when it comes T-Rat. I think we could have studied together when we have free time outside of class and teach each other to get higher grades everyone. In the last, we did not say about this at all, though at least one member played a leader to try to work efficiently during the class and others kept up with her/him.

6 Conclusion

My impetus for starting on this journey was concerns over how well learners in the project were preparing out of class and building foundational knowledge of the beer industry. Although results from the readiness assurance tests highlight the need for more support or scaffolding when assigning out-of-class listening or reading assignments, there was evidence that the RATs were helping learners to engage with the material and come to class prepared. As the above quotes highlight, the team-based learning elements seem to be helping learners develop skills in researching and collaborating while also extending their English language proficiency. Another benefit of adopting TBL elements has been seemingly deeper levels of investment by learners in later stages in the project when they are researching a specific topic/issue related to the beer industry (e.g., taxation, environmental impact, marketing strategies) and compiling case studies of local craft beer companies. Creating nuanced and thought-provoking multiple choice test items for the iRATs and tRATs has been the biggest challenge, but this investment of time and energy will likely pay huge dividends. In the end, I am encouraged to continue experimenting with TBL and hope this report might inspire readers to try TBL in their own courses.

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Appendix 1 - Module One Assessment

Name: Team: Student Number:

Did the team fulfill the requirements of the assignment?	High	5	4	3	2	1	Low
Did the team include each step of the brewing process?	High	5	4	3	2	1	Low
Did the team correctly explain each step?	High	5	4	3	2	1	Low
Did the team design/choose attractive visual support?	High	5	4	3	2	1	Low
Was the audio quality good?	High	5	4	3	2	1	Low
Did each team member speak clearly and forcefully?	High	5	4	3	2	1	Low
Was the production quality professional?	High	5	4	3	2	1	Low
Did the team express their creativity?	High	5	4	3	2	1	Low

Comments: Total: _____ / 40 points