



Peer-Assessment to Improve Speaking Skills in a Public Higher Education Institute

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English communicational skills are vital in International Trade degrees, a major element in this branch of commerce education is Port Logistics, even though technical English provides important and useful speaking outcomes to a professional in the field, this relevance is not evidenced in the curriculum design.

Consequently, teaching technical English in these kinds of degrees should integrate learning outcomes-oriented to develop students' ability to communicate effectively in a real working environment. This need becomes evident due to the nature of the dual model applied in Ecuador, where students are involved in enterprises from the first semester and must fulfill 1600 hours equivalent to 50% of the program performing internships in enterprises related to the core competences of the career.

Surprisingly, the great majority of professional English subjects have a poor number of credits assigned; thus, instructors should set in motion a series of synergistic strategies that could contribute to reaching the transfer goals of the course. One strategy is applying peer assessment on formative activities to improve performance on speaking skills and encourage students to get involved in the learning process.

The present research, therefore, has the purpose to conduct an innovation to evaluate the use of peer assessment to improve the performance of speaking skills in dual degree students from a public higher education institute in Ecuador.

Literature Review

As the present study involved the use of peer assessment to improve speaking skills it is necessary to explore concepts of peer assessment, speaking skills and factors that affect reliability of peer assessment. The sources presented in this section are all academic and includes definitions, related studies, benefits and challenges or limitations in previous studies.

Peer Assessment

Peer assessment is a process where students assess their classmates and this involves developing a student-center class (Yan & Boud, 2021). This kind of strategy is applied to achieve learners, responsibility of their own performance and to promote students strengths on communicative skills (Ahangari et al., 2013).

Principally, when teachers use peer assessment strategies, students are more likely to develop self-confidence and motivation, however the role of the teacher should never be removed from the equation because it is important to give the correct instructions to develop the activity and to provide the right tools and instruments (Ibarra-Sáiz et al., 2020).

In particular, one advantage offered by integrating peer assessment in higher education is that it promotes the enhance of critical thinking, integrating knowledge and help learners to develop self-regulation related to the degree of responsibility that implies to assess their peer (Stelmakh et al., 2021). Besides, by applying peer assessment teachers are motivating students to participate actively in classroom and practice their oral skills while they receive feedback form their peers. According to Ibarra-Sáiz et al. (2020) feedback is “Specific and detailed information on the quality of work and improvement in commitment aimed at enabling improvement”(p. 142).

In addition, it is important to remember that in peer assessment, there are two different roles: assessor and assessee, each with a different purpose that includes feedback; the assessor provides feedback, and the assessee receives it (Lin et al., 2021). Furthermore, it is proven that peer feedback has a better influence result than teacher feedback which helps to obtain better learning outcomes (Chang et al., 2020).

Reliability and effectiveness of peer assessment

One of the multiple factors that could affect the reliability of peer assessment is language skills. In particular, if the peer with the assessor role has a lack of proficiency in the use of the language, the results of the assessment will be compromised and not only will they not be accurate, but most importantly, these results will not help the assessee to improve the work and, in some cases, could create confusion and delays in the planning design (Li et al., 2022).

Another factor that influences the effectiveness of peer assessment is the classroom climate. For instance, Li et al. (2022) indicated that if a classroom group is too competitive and does not have teamwork abilities, the effectiveness of peer assessment is limited because students perceive each other as direct competitors instead of thinking of themselves as partners. As a result, they do not feel comfortable with the assessment and tend to evaluate their peers in a subjective form (Sokhanvar et al., 2021).

In a similar manner, “learners need training in peer assessment criteria and how to provide positive, negative, and neutral comments on their peers; assessors who are not well trained provide unreliable and ineffective assessment outcomes” (Colombo, 2020, p.92).

Speaking Skills

In the matter of English as a Second Language learning, through oral production, learners express their ideas, which is an indicator of mastering a language, but it is also considered the ability that needs more effort to master and the most challenging one (Fauzan, 2016).

When learners are developing speaking skills, they face certain problems like fear of making mistakes, lack of fluency, which makes them hesitate. The reason is that speaking involves the ability to manage the conversation (Gargano, 2021). They need to elaborate the

PEER-ASSESSMENT TO IMPROVE SPEAKING

speech at the moment of speaking, and the response time does not compare to a simulated scenario in the classroom environment, so they need to be spontaneous (Iglesias et al., 2022).

A possible solution within the context of technical English is to use a professional oriented book that targets the vocabulary and commonly use expressions that are essentials to enhance communication. The main problem with this kind of books is the lack of context that is why in order to enhance activities and time during classes, teachers should design complementary activities oriented to real situations, as Richards (2005) stated, "classroom activities should parallel the real world as closely as possible" (p.24).

Consequently, the teacher should not only rely on the resources of a textbook but also include the use of authentic materials and adapting the contents of the book to the needs of the students. According to Richards and Farrell (2011), "Modifying content: Content may need to be changed because it does not suit the target learners, perhaps because of factors related to the learners' age, gender, occupation, religion, or cultural background" (p. 57).

According to Smith (2017), when students use peer assessment and feedback, they mutually reinforce their skills. They are also forced to improve by checking data and constructing their arguments, which helps them express their ideas with more clarity (Zano, 2022).

Innovation

The intervention was planned to be executed while students were learning port operations units, which were important for them because, as dual degree students, they spend 50% of the time in learning activities in touch with the teacher and the other 50% as interns in an enterprise related to their field of knowledge (Tryus & Herasymenko, 2021). In this semester, students were all involved in ground operations at the port terminals they were assigned, which means they needed to understand a lot of vocabulary because of the nature of the documents they handle that are in English. As one example, the Equipment Interchange

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Receipt (EIR) contains information like the number of the container, the vessel, if the container is empty or loaded, the weight, the type of the container, the stacking position, and information about the status of the container if it is damaged or not (Vicrihadi et al., 2021).

With that precedent, they not only require to know the vocabulary but also how to express themselves in the proper way because sometimes they must establish communication with shipping companies that are established in other countries. That is why developing confidence and helping them lose the fear of speaking in L2 is important.

Therefore, the innovation was designed in the Port Operations unit to implement a pre-test without peer assessment, students as well as the teacher graded the assignment. Then they were introduced to peer assessment techniques and the use of rubrics in additional classes that were imparted through the virtual learning environment (Classroom).

The innovation focused on improving the speaking skills of students and it was designed according to the syllabus for four weeks with a duration of eight hours per week. In this section, it becomes important to specify that the teacher designed a study guide because the main textbook contains general but not specific information on how the processes the students need to learn work. So, the study guide was created using authentic materials, taking into consideration how the port operations work in Ecuador. Therefore, the input materials were the book and the study guide that were used by the teacher as resources to explain the different processes presented in this unit. Consequently, at this point of the innovation, the teacher has the role of a facilitator.

The next class, the teacher changes the role of the facilitator to a coaching role and instructs the learners in peer assessment: how it works, the benefits, and the importance of proper peer feedback. Then, the students change their passive role to an active one where they

PEER-ASSESSMENT TO IMPROVE SPEAKING

must analyze and assess their peers' work so they can improve their own work based on the feedback.

Another important aspect of the innovation was that the students had to meet at least three times between pre and post-test and they had to document the meeting, so the students take their roles as assessor and assessee seriously.

They were also supposed to have at least three meetings supported by audiovisual evidence. In the meeting, they would apply what they learned from peer assessment and assertive feedback to improve their work. After the last meeting, the students had one week to present their final product to the teacher and their peers for grading with the same rubric from the pre-test. In order to provide consistent, objective, and reliable results for this study, the post-test was also graded by the teacher using the rubric to contrast information and reduce bias.

Finally, the whole unit and its outcomes were developed using the standards of Common European Framework of Reference for Languages (CEFR) descriptors scales of sustained monologue for giving information at a B1 level. "Can report straightforward factual information on a familiar topic, for example to indicate the nature of a problem or to give detailed directions, provided he/she can prepare beforehand" (Council of Europe, 2018); see the lesson plan in Appendix 1.

Research Methodology

This action research study with a quantitative approach seeks to address the relation between peer-assessment and improvement in speaking performance using a quantitative approach. Coughlan and Coughlan (2002) highlighted that action research is an approach to research that aims to both take action and create knowledge or theory about action. This work

PEER-ASSESSMENT TO IMPROVE SPEAKING

is designed to assess the following research question: Does peer-assessment improve the speaking skills of Port Logistics Technology students? It is expected that peer-assessment will improve speaking skills of Port Logistics students between pre-test and post-test.

Participants

The innovation was applied to B1-level students, and according to the academic records that the institute provided to the teacher by that semester, students from that group had already reached that level. The group belong to a public higher education institute in Guayaquil, Ecuador that offers technology degrees. The institute is in an urban area in the north of the city. The students were undergraduates from the Port Logistics Technology program and the subject belongs to the fifth semester, which is currently the last semester of a technology degree in Ecuador according to the regulations of higher education programs. The participants were from a single class and were between 20 and 24 years old. The class had 23 students, 15 were female and 8 were male, and the intervention was made with the whole sample.

Instruments

The instruments are the pre-test and post-test, which were used to test the research question. The pre-test and the post-test were graded by the participants at two different moments, the first one before the innovation and the second one after the innovation.

Pre-test

During the first session, the pre-test was conducted, and the learners were asked to record a short video with a duration of one to two minutes explaining the import or export dispatching container process, using at least 10 terms of the yard operations vocabulary and applying grammar related to giving instructions. The teacher assigned pairs to peer assess

PEER-ASSESSMENT TO IMPROVE SPEAKING

face-to-face and give feedback. Once the pre-test is graded by the students using the rubric, the teacher provided feedback and explained some of the benefits of peer assessment.

Post-test

By week four of the innovation, students were asked to submit the same activity as in the pre-test. They were required to have three meetings with their academic peers, where they applied the peer assessment rubric and provided face-to-face feedback according to the directions given by the professor in the class sessions. Once the changes suggested by their peers were made, they could upload the improved version of their videos. As described in the innovation section, the innovation was developed for four weeks, corresponding to the topic of port operations according to the syllabus.

The rubric to grade de pre and posttest was created considering the Common European Framework of Reference for Languages (CEFR) standard for B1 learners according to sustained monologue and including criteria from the course curriculum. The rubric assesses grammar, organization, pronunciation, and vocabulary (see Appendix 2).

Data Analysis

In order to answer the research question and to accept or reject the stated hypothesis of this study, a paired *t-test* was completed. The paired sample *t-test* allows for a contrast between pre-test and post-test. The analysis was done in Microsoft Excel using the Analytics Tools Pack.

Ethical Considerations

This study was conducted considering some ethical considerations like informing students the results of the innovation were going to be published. They also had the opportunity to decide if they wanted to become part of the study or not by subscribing to a commitment letter. There was no need to inform the parents of the students because they were

PEER-ASSESSMENT TO IMPROVE SPEAKING

all adults. Also, the institute administrators and coordinators from the areas of research and language center and the program coordinator were informed about the study and the use of the information gathered. Finally, the identities and performances of the participants remain anonymous. These considerations were applied by following the recommendations of Zeni (1998).

Results

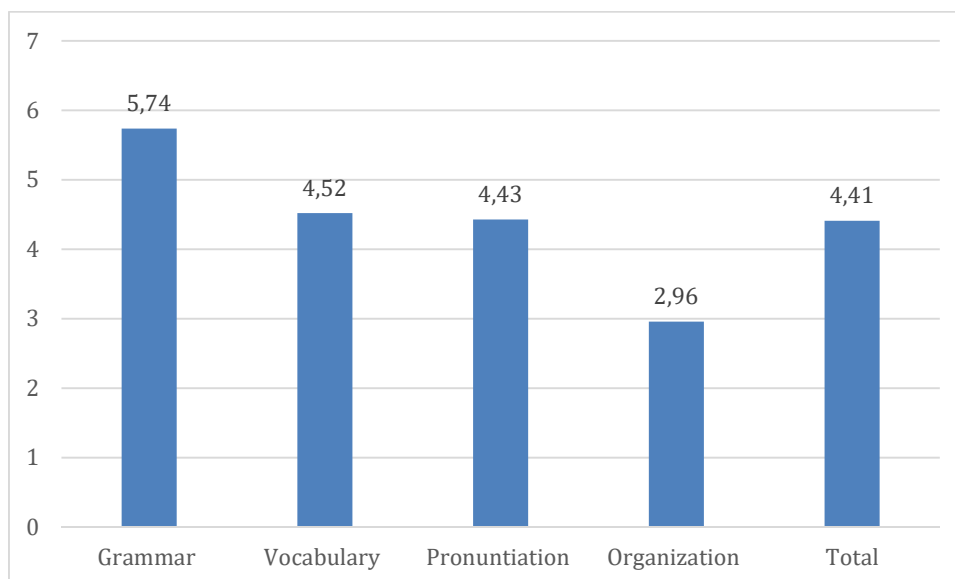
Pre-test rubric peer-assessment

Students' pre-test scores on the rubric resulted in a mean of 4.41 over 10. This score corresponded to the category of "acceptable". The range on the pre-test was between 3 and 6.

A distribution of scores can be seen in Figure 1.

Figure 1

Pre-test rubric peer-assessment

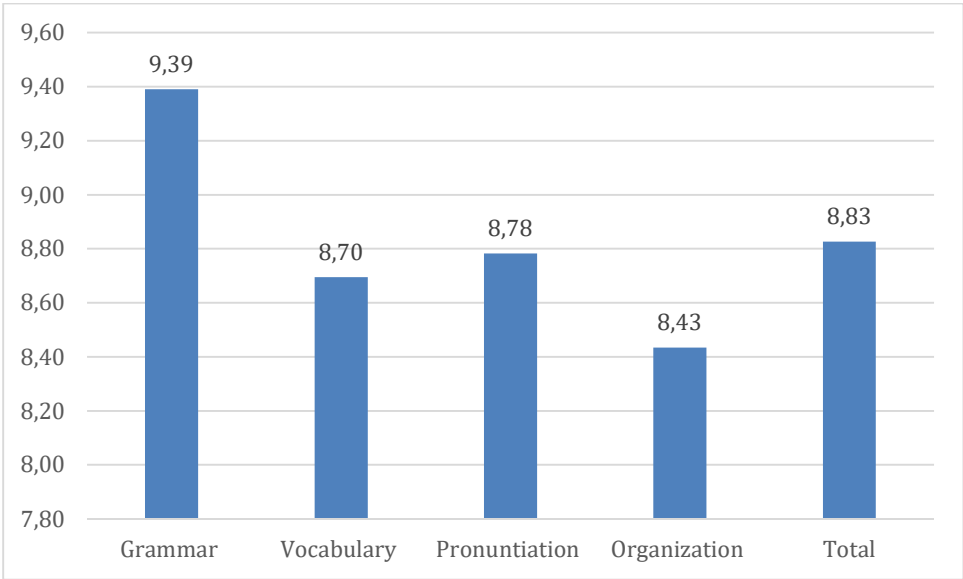


Post-test peer-assessment rubric

Students' post-test scores on the rubric resulted in a mean of 8.83. This score corresponded to the category of "proficient". The range on the post-test was between 8 and 10. A distribution of scores can be seen in Figure 2.

Figure 2

Post-test peer-assessment

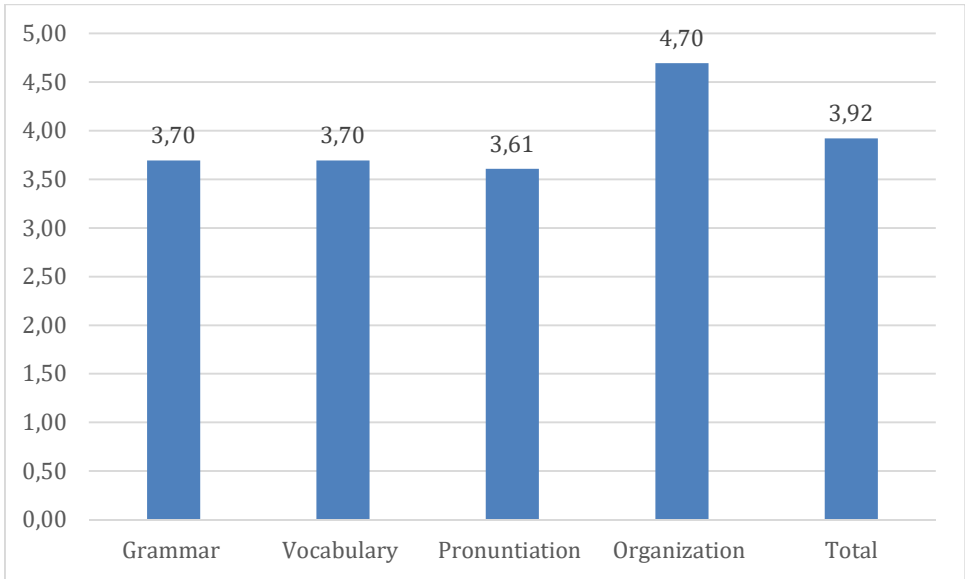


Pre-test instructor-graded rubric

The instructor pre-test scores on the rubric graded by the teacher resulted in a mean of 3.92. This score corresponded to the category of “acceptable”. The range on the pre-test was between 2.5 and 5.5. A distribution of the range and mean scores can be seen in Figure 3.

Figure 3

Pre-test instructor graded rubric

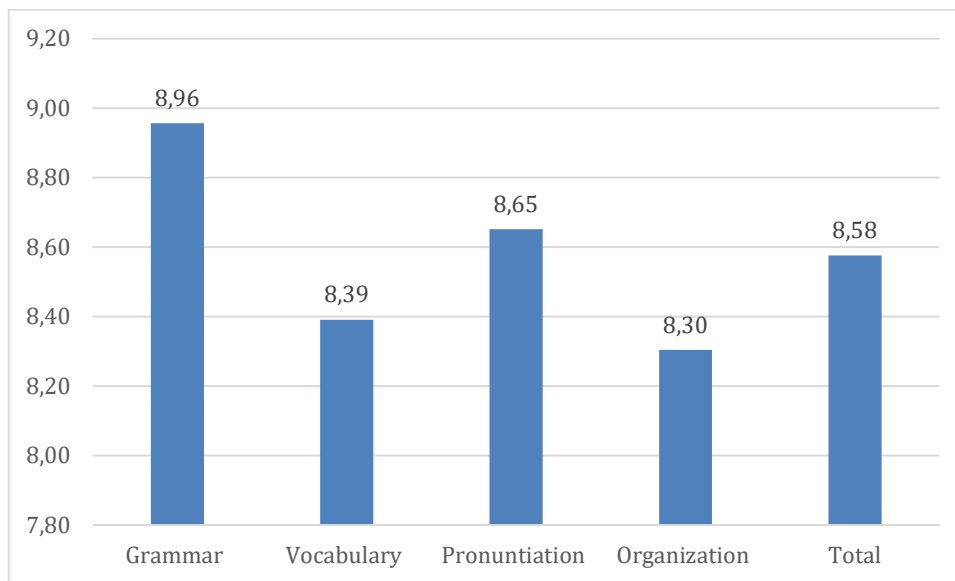


Post-test instructor-graded rubric

The instructor post-test scores on the rubric were similar to the findings of the student’s graded rubric and resulted in a mean of 8.58. This score corresponded to the category of “proficient”. The range on the pre-test was between 8.00 and 9.75. A distribution of the range and mean scores can be seen in Figure 4.

Figure 4

Post-test instructor-graded rubric



Statistical comparison of pre-tests and post-test peer-assessment

All the 23 students were graded on the pre-test and post-test using the rubric. Student’s pre-test scores on the rubric were stated at a mean of 4.41, which is acceptable with the pronunciation and organization criteria being the lowest rated. Conversely, the post-test resulted in a mean of 8.83, which was categorized in the rubric as proficient. Contrary to the pre-test, the pronunciation and grammar criteria were the highest graded and the range was from 8 to 10. Students’ peer-assessment score was correlated with their pre-test and post-test scores.

The correlation analysis between pre-test and peer-assessment post-test showed a moderate positive association ($r = .52$). The paired-sample *t*-test identified a statistically

PEER-ASSESSMENT TO IMPROVE SPEAKING

significant difference between pre-test and post-test scores ($t = 30.17, p < 0.001$). The test indicated support for the alternative hypothesis.

Table 1

Descriptive statistics based on the rubric peer-assessment

Descriptive Statistics					
	<i>N</i>	<i>Min</i>	<i>Max</i>	<i>Mean</i>	<i>Std. Deviation</i>
Pretest	23	3.00	6.00	4.41	0.67
Posttest	23	8.00	10.00	8.83	0.20
Valid N (listwise)	23				

Table 1 shows the summarized results of the peer-assessment graded rubric, which evidences a significant improvement after the innovation. The standard deviation shows homogeneity in the results, which implies that the data is compact and close to the mean. Therefore, it can be inferred that after the innovation there was a significant improvement in the achievement of the learning outcomes, and in this group of students from Port Logistics, applying peer assessment improves speaking skills.

Discussion

Regarding to the research question Does peer-assessment improve the speaking skills of Port Logistics Technology students? The results are positive due to the improvement of speaking skills when peer assessment is used correctly. This pattern of results is consistent with authors like Alt & Raichel, (2022); Chien et al. (2020); Colombo (2020), Fauzan (2016), Ibarra-Sáiz (2020) and Li et al. (2022), and These studies also revealed that peer assessment encourages students to actively participate in classes, to speak, and to share their thoughts; by improving these features, students become more confident in their communicative skills and have the ability to assess the oral productions of their peers when they have clear and detailed instructions of the activity they need to perform; when they are trained in peer feedback

strategies; and when they have access to a tool. It is important to note that the *p*-value results of this study are consistent with other findings that show similar results.

On the other hand, whereas researchers like Li et al. (2022) have found a stronger correlation of ($r = 0.82$) between the variables peer assessment and speaking skills, the present study has shown a correlation of ($r = 0.52$) more related to the findings of Chien et al. (2020) where the correlation was ($r = 0.40$). The most compelling explanation for these differences could be the sample size used in the experiment, although it also could be the difference between the context where the innovation was applied.

Conclusions

The results of this study provide supporting evidence that applying peer assessment improves performance in speaking skills in students from a technology dual degree in Port Logistics. There are two key findings in this research. First, to apply this kind of innovation, it is necessary to introduce participants to techniques that help them understand and correctly use peer assessment because they are not teachers, and they need this guide in the process. Second, the results did show that there was an improvement between the pre-test and the post-test, which is considered significant. The difference between means in the pre-test and post-test were almost 50% which validates the improvement.

Among the primary advantages of using peer assessment, this researcher discovered that it is a strategy that aids in classroom management because in a traditional classroom, only a small group of students participate. Nevertheless, by applying peer assessment, all students are involved in the process.

Although it could be argued that this activity cannot be replicated in larger classes, it seems plausible to do it with the correct use of technology in the classroom, like videos or

PEER-ASSESSMENT TO IMPROVE SPEAKING

voice notes. Without these technological tools, due to the small number of hours of the subject, achieving this positive result would not be possible.

Limitations

Despite the limitations of the study, this research can be considered as a first step toward establishing a more accurate relationship between the use of peer assessment and the improvement in the performance of speaking skills.

There were at least two potential limitations regarding the results of the study. The first limitation is the time allotted for the innovation process, which is limited given the importance of the subject and the applications for the students so it could be inferred that the results would be even better if we could work for longer than four weeks. A second potential limitation is that this was the first-time students worked with this kind of assessment, which means that they may have been biased when they graded their partners.

Even though, there were a lot of benefits, especially when they were integrated into their companies, the tutors told the institute that this semester students would spend more time in yard operations and less time in training sessions explaining the basis of the documents and the process terms in English because at least 60%¹ of the students were already familiar with the vocabulary and proper names of the equipment and fields of the documents. In my view, the experience was useful and helped the course reach the transfer goal.

¹ The percentage was provided by the enterprise in a technical visit to the students at the port terminal to check their progress and it was not measure in this study by the researcher and was taken as empirical evidence.

Recommendations

In terms of future research, it would be useful to replicate the study with a program that has more hours of dedication and to try to apply peer assessment to more than one unit. Another suggestion is that peer assessment be used in various contexts as a soft skills development program in at least one subject per semester due to the benefits in student performance. In order to accomplish this, it is recommended that before institutes should invest in training for the teachers of different subjects so they can use a set of strategies to enhance the learning process.

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PEER-ASSESSMENT TO IMPROVE SPEAKING

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PEER-ASSESSMENT TO IMPROVE SPEAKING

Appendix 1

Lesson plan.

Available upon request.

Appendix 2

Rubric

Available upon request.

Appendix 3

E-Portfolio

Available upon request.