The Impact of Co-creating Rubrics on Peer Assessment in Higher Education EFL Classes

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Abstract: At present, peer assessment teaching model has been widely popularized and applied in foreign colleges and universities. For a long time, the existence of peer learning community is often ignored due to the teaching activities in Chinese higher English class. The development of modern society and the theory of educational concept innovation have challenged this, requiring us to pay attention to realize and promote the interaction between students and fully tap and mobilize students’ enthusiasm and learning enthusiasm, and improve the efficiency and quality of classroom teaching. Most of the researches on co-creating rubrics mainly discuss the impact of using rubrics when students participate in peer assessment. However, the researches on co-creating rubrics are very limited. Therefore, in recent years, Chinese scholars have also begun to analyze the implementation and application of peer assessment in English teaching in colleges and universities in our country. In peer assessment, teachers usually set rubrics to evaluate the level of students. When rubrics are set by students themselves rather than only teachers, students’ co-creating rubrics become the new criterion. This study will explore the impact of co-creating rubrics on students’ participation in peer assessment in three aspects: students’ emotions, behaviors, and cognition. The authors collected research data from both students’ journals and the content of interviews with students and conducted an in-depth analysis of the data to conclude that the co-creating rubrics has a profoundly positive impact on student participation in peer assessment. This study has important implications for improving assessment methods and for improving the way EFL classes are conducted in higher education.

Keywords: Co-creating rubrics; Rubrics; Peer assessment; Higher English education; Assessment method

1. Introduction

1.1. Background of the Research

At present, peer assessment teaching model has been widely popularized and applied in foreign colleges and universities. For a long time, Chinese higher English teaching activities pay too much attention to the learning community of teachers and students, but ignore the existence of the learning community of peers. However, rubric, as a document with a list of assessment criteria, a scoring strategy and quality definitions normally stated on a scale, is usually used by teacher in peer assessment. However, innovations in education have alarmed with challenges, requiring more attention to the student-led assessment to fully mobilize students’ learning enthusiasm, and to improve the efficiency and quality of classroom teaching. Therefore, in recent years, the implementation and application of peer assessment in English teaching in universities has been widely studied. In peer assessment, teachers usually use prepared rubrics to evaluate students’ performance. In traditional teaching, teachers often simply provide rubrics without further elaboration and explanation. However, a disjunct may exist when there is a discord between teachers’ expectation and students’ actual understanding of rubrics. When rubrics are designed partially by students rather than only by teachers, they can involve students in the teaching and learning activities, and consequentially enhance students’ autonomy in learning. Students’ feeling towards feedback may be different in aforementioned situation, and therefore, affects their desire to respond to it [1]. At present, most studies mainly discuss the impact of the use of rubrics when students participate in peer assessment. However, the research that focuses on rubrics co-creating process are very limited, not to mention its impacts on peer assessment. This dissertation will explore the impact of co-creating rubrics on peer assessment in higher education EFL classes from aspects of emotion, behaviour and cognition.
1.2. Purpose of the Research

Rubrics are an indispensable part of language assessment, and students will better understand assignments, so as to learn more effectively. However, in the current language assessment of higher education EFL classes, rubrics have not been well used to play a positive role, and are even ignored by teachers and students. A single rubric can neither fully enable students to understand the meaning of the goal, nor cultivate students’ ability to think independently. To some extent, co-creating rubrics can improve students’ cooperation ability and stimulate their interest in learning. Therefore, this study attempts to integrate the theory and practice of the two research fields of rubrics and peer assessment, and on this basis, studies the impact of co-creating rubrics on peer assessment in higher education EFL classes, aiming to explore a practical model of higher education EFL classes, and provide some instructions and reference for the future higher education EFL classes [2].

2. Literature review

2.1. Formative assessment: definition and strategies

Assessment plays a significant role in higher education and it is an indispensable part in the educational system. Generally, assessment can be categorized into summative assessment and formative assessment. In the history of China, summative assessment has long been regarded as the primary method of measuring learners’ learning outcomes. As time moves on, the limitations of summative assessment outshine its advantages and more expert educators gradually realize the effectiveness of formative assessment, highlighting formative assessment as an alternative method to achieve student and teacher improvement. The definition of the term formative assessment was first put forward by Scriven that was mainly adopted in educational projects. Then Bloom brought the term formative assessment into the instructional evaluation and clearly claimed the difference between summative assessment and formative assessment. Later, Blake and William redefined formative assessment from the perspective of its purpose and function, claiming that “practice in a classroom is formative to the extent that evidence about student achievement is elicited, interpreted, and used by teachers, learners, or their peers, to make decisions about the next steps in instruction which are likely to be better, or better founded than the decisions they would have taken in the absence of the evidence that was elicited.” Relevant research is increasing, and the concept of formative assessment has been updated with the changing environment. Some scholars argued that formative assessment can be seen as an ongoing and a preserved process that is adopted by teachers and students in teaching and learning process in order to deepen students’ understandings and cultivate them to be self-directed learners. In the context of language teaching, the definition of formative assessment can be narrowed down. It is argued that formative assessment is a judgment-based paradigm of classroom activities that focuses on the assessor’s skills. It calls for the assessor (teacher, student) to adopt, adapt, and design a variety of appropriate tasks (classroom questions, tasks, paper and pencil tests, portfolios, etc.), systematically gather information from students (both learning products and learning processes), analyze and interpret information using appropriate assessment tools and other proper methods. While there are significant differences between these definitions, there are also numerous complementarities and commonalities that collectively form a full idea of formative assessment. The range of academic definitions mirrors the complexity of formative assessment research itself. Of these definitions, the one by Black and William was referred the most and has subsequently served as the foundation for a large body of formative assessment-related research. Within FA, plenty of strategies are applied in teaching and learning languages, such as Sharing Learning Aims, Teacher’s Feedback, Questioning, Peer Assessment and Self-Assessment. Sharing Learning Aims, compared with other FA strategies, has been an understudied area. Checklists, rating scales, and rubrics are utilized as scoring keys in formative assessment [3-5]. The most popular of these scoring keys is the rubric. Along with Peer Assessment, the use of rubrics from Sharing Learning Aims, and particularly, co-created rubrics, will be discussed in this dissertation. When judgments based on an assessment can most directly impact students’ learning, the assessment is said to be formative. After education is complete, the assessment is a summation, giving a summary of the efficacy of the instruction rather than data that can be used to modify instruction to maximize learning for the specific cohort.
2.2. Co-creating Rubric

2.2.1. Rubric: definition and disciplinary applications

Kan suggests that the rubric is a scoring guide that outlines the qualities and standards for various levels of performance and that is used to evaluate performance in light of certain qualities and standards. That is, rubrics can be used to evaluate a wide range of subjects and activities and are frequently used when a judgment of quality is required. In addition to providing more accurate scoring, rubrics allow teachers, students, and parents to communicate about the students’ strengths and weaknesses. According to the scoring method they use, rubrics are separated into holistic and analytic rubrics. While one rubric might use general quality terms (such as “good” or “below standard”), another might go into further depth about what quality entails. Some rubrics use pictures instead of text, such as emoji or illustrations of what work should look like to meet a specific standard. Since its inception in education, the term “rubric” has not been very precise. Dawson’s study sheds light on a synthesis of rubrics and provided a framework to give detailed illustrations about rubrics. A host of research indicated that, if not by a significant number of teachers, then at least a wide range of disciplines in higher education employ rubrics. The liberal arts, information literacy, medicine, nursing, management, dentistry, food technology, teacher education, and film technology are among the fields for which published studies on the use of rubrics exist. For example, Shipman et al. stepped into the study of the use of a rubric to assess nurse educators to provide feedback in the field of nursing. Situated in the discipline of business, a study carried out interviews with a host of employers and created a peer-assessment loops along with co-created rubrics. In arts education, there was a study investigating the usefulness of rubrics for undergraduate students to promote their professional judgement. Concept maps, literature reviews, reflective writings, bibliographies, oral presentations, critical thinking, citation analyses, portfolios, projects, oral and written communication skills, and other students deliverable are all graded using rubrics [6-8].

3. Methodology

This paper focuses on the impact of co-creating rubrics on peer assessment in higher education EFL classes, focusing on the emotional, behavioral, and cognitive aspects of students. Therefore, this chapter mainly introduce the research questions, research context and procedure research design, instruments and data collection and analysis in detail.

3.1. Research Questions

Theoretically, most of the researches on co-creating rubrics mainly discuss the impact of using rubrics when students participate in peer assessment. However, the researches on co-creating rubrics are very limited. According to the background and research gap of this study, this study aims to address the following four questions:

Question 1: To what extent can rubric co-creation affect students in peer assessment in higher education EFL classes from the perspective of emotion?

Question 2: To what extent can rubric co-creation affect students in peer assessment in higher education EFL classes from the perspective of behaviour?

Question 3: To what extent can rubric co-creation affect students in peer assessment in higher education EFL classes from the perspective of cognition?

3.2. Research Context and procedure

3.2.1. Context and participants

This study will be conducted with English-major first-year university student at a private university in Macao using convenience sampling method. The researcher simply selects the sample from people to whom he has easy access. Since it does not represent any group other than itself, it does not seek to generalize to the wider population; for a convenience sample that is an irrelevance. The instructor of the classes is author’s supervisor. It is convenient to communicate with both the teacher and students due to the close relationships. Students participating in the research have good high school English proficiency at the beginning of the project as they were enrolled into the university with comparatively high University Entry Exam scores, particularly in English. Most of the teaching is
delivered in an English Medium Instruction environment and all the students are well-trained with academic English in their first-year study, therefore, the quality of qualitative data is ensured by the expressive and analytical abilities that students capable with.

### 3.3. Research Design

In this research design, students in Class 2 had participated in the co-creating rubrics since the first semester, while students in Class 1 had experience with the co-creating rubrics in the second semester only. In the first semester, students in both classes completed three journals in week 2 and week 7 in week 12. The difference was that the students in Class 2 did a co-creating rubrics activity before completing their journals in week 12, while the students in Class 1 did not. In the second semester, students in both classes worked on co-creating rubrics in week 10 and received semi-structured face-to-face interview in week 11. Table 1 shows the time of co-creating activities and data collection activities. Instruments and data collection procedure will be introduced in the following sections [9].

<table>
<thead>
<tr>
<th>Time</th>
<th>Semester 1</th>
<th>Semester 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class</td>
<td>Week 2</td>
<td>Week 7</td>
</tr>
<tr>
<td>Class 1/2</td>
<td>Class 2</td>
<td>Class 1/2</td>
</tr>
<tr>
<td>Activity</td>
<td>Journal 1</td>
<td>Co-creating Rubrics</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Journal 2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Journal 3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Co-creating Rubrics</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1-1 Interview</td>
</tr>
</tbody>
</table>

### 3.4. Instruments

#### 3.4.1. Journal

The study used journal for students to explore the affective, behavioral, and cognitive effects of co-creating rubrics on students in peer assessment. Writing journal involves the practice of writing about personal experiences, thoughts, and feelings in a systematic manner. Students in both classes were expected to use Gibbs’ reflective cycle to write about their three peer assessment experiences. Gibbs’ reflective cycle was developed by Graham Gibbs in 1988 to give structure to learning from experiences. It offers a framework for examining experiences, and given its cyclic nature lends itself particularly well to repeated experiences, allowing students to learn and plan from things that either went well or did not go well. It covers six stages: description of the experience, feelings and thoughts about the experience, evaluation of the experience, analysis to make sense of the situation, conclusion about what you learned and what you could have done differently and action plan for future. When used as a data collection instrument, journals can provide rich and detailed descriptions of individuals’ experiences, perceptions, and attitudes, especially when combined with Gibbs’s reflective cycle, which can provide a good understanding of students’ experiences with peer assessment and be useful in the research [10]. In this study, students’ journal were collected three times. Because the teacher conducted three times co-creating rubrics activities before these three journals. The guidelines for the journal are attached in the appendix A.

### 3.5. Data Collection

#### 3.5.1. Journal data collection

The study collected three pieces of journals from two classes consisting of 63 students in total. The topic of all journals was peer assessment, with each of the three journals exploring different aspects of the experience. The first journal allowed for reflection of previous peer assessment experience without any restrictions, while the second and third journals were specifically focused on peer assessment experiences of speaking and group presentations, respectively. Notably, the two classes had distinct experiences with co-creating rubrics, with Class 1 not co-creating rubrics, while Class 2 did. This different experience was introduced between the first and second journals to test how the two classes perceived the peer assessment experience. The data collection procedure spanned 10 weeks, with the first journal being completed in week 2 of the semester, the second in week 7, and the third in week 12 (see Table 1).

Overall, this data collection approach allowed for the capture of rich and detailed qualitative data about students’ experiences, perceptions, and attitudes towards peer assessment. This data will be subjected to thorough analysis to generate insights and recommendations on how rubric co-creation are influencing peer assessment practices in higher education EFL settings [11].
4. Findings and Analysis

The findings of the study are presented and discussed in this chapter. First of all, students’ views on their participating in peer assessment without the co-creating rubrics experience and their perceptions of the rubrics are analyzed. Second, students’ perceptions of co-creating rubrics are discussed, which include how they engage in co-creating rubrics as well as their understanding and feelings about the process. Then, students’ perceptions following their participating in the co-creating rubrics are discussed, which include their views on peer assessment and on the rubrics. Finally, the perceptions of students with different academic achievements in English about the assessment method that combines co-creating rubrics and peer assessment are further discussed, as well as concerns and suggestions for this assessment method.

4.1. Perceptions before Co-creating Rubrics

This part mainly focuses on students’ perceptions of peer assessment and their views on the rubrics before participating in the co-creating rubrics.

4.1.1. Perceptions of Peer Assessment before co-creating rubrics

From an affective perspective, the authors used the Nvivo software to conduct an in-depth analysis of the diaries of students in both classes who, prior to their participation in the co-creation of the grading rubric, generated a variety of emotions as they engaged in peer assessment. The details are listed in the following table:

<table>
<thead>
<tr>
<th>Emotional variables</th>
<th>Content</th>
<th>Reason</th>
</tr>
</thead>
<tbody>
<tr>
<td>admired</td>
<td>There is no doubt that my partner has a high level of attainment in English, which I admire.</td>
<td>Outstanding partner</td>
</tr>
<tr>
<td>apologized</td>
<td>I realized that I must apologize to my dear partner who seriously wrote the passage but only ended up getting my inappropriate feedback.</td>
<td>Mismatch feedback</td>
</tr>
<tr>
<td>confused</td>
<td>1. Frankly speaking, I used to keep a viewpoint that other people’s opinions are not so important at all, so was very confused when Professor said that we need to give each other opinions. 2. Feeling confused, I even don’t understand what peer-feedback is.</td>
<td>Ignore the importance/ incomprehension of the task</td>
</tr>
<tr>
<td>excited</td>
<td>When I first saw the feedback that Simple gives to me, I was so excited about she wrote such carefully.</td>
<td>Detailed feedback</td>
</tr>
<tr>
<td>nervous</td>
<td>1. The first time I wrote the feedback, I felt very nervous. 2. It’s very nervous for me before present on the stage 3. Maybe it’s the first time for me to do a presentation that lead to my feelings of nervous and upset when facing the audience. 4. When it was my turn to present, I was too nervous to speak clearly at first. 5. We were all very nervous about it as we don’t have any experience.</td>
<td>Lack of experience</td>
</tr>
<tr>
<td>empathize</td>
<td>I found that her experience in learning English in high school was similar to mine, and I felt empathy.</td>
<td>Similar experience with partner</td>
</tr>
<tr>
<td>satisfied</td>
<td>After finishing the feedback, I felt satisfied.</td>
<td>Sense of Achievement</td>
</tr>
<tr>
<td>difficult</td>
<td>It’s very difficult to me because of my poor English, although I contacted my spoken English after class.</td>
<td>Lower English proficiency</td>
</tr>
<tr>
<td>shyness</td>
<td>I still remembered my shyness in the first few classes.</td>
<td>Lack of experience</td>
</tr>
<tr>
<td>embarrassed</td>
<td>Honestly, I have never done it before, so I was terrified of such a project.</td>
<td>Lack of experience</td>
</tr>
<tr>
<td>unpleasant</td>
<td>I didn’t speak English quite often when was in Chinese mainland, so the experience of English speaking in Macao was unpleasant to me at the moment.</td>
<td>Lack of practice</td>
</tr>
<tr>
<td>relaxed</td>
<td>And when I said some of my points, the teacher would nodding response to me, which made me relax a lot.</td>
<td>Teacher’s encouragement</td>
</tr>
<tr>
<td>both nervous and exciting</td>
<td>It’s a test for us and an opportunity for us to learn from others and improve ourselves, so it’s both nervous and exciting.</td>
<td>Both learning opportunity and challenge</td>
</tr>
</tbody>
</table>

According to Table 2, it is obvious that students generated more negative emotion types than positive emotion types and neutral emotion types when they participate in the peer assessment. With the largest number seven reflected on negative types, students generated three positive emotion types and four neutral emotion types. Including apologized, confused, nervous, difficult, terrified, unpleasant, and embarrassed, the negative emotion types is diversified. As to the other two, positive emotion types...
involve excited, satisfied, and relaxed, and neutral emotions include admired, empathize, and both nervous and excited. The results of the number of emotion types showed that students had more negative emotions than positive emotions during the peer assessment activity, and the number of neutral emotion types, with one type more than positive emotion types, was located between the negative emotion types and positive emotion types.

4.1.2. Perceptions of Rubric before co-creating rubrics

The above are what the six students mentioned in their interviews about their understanding of rubrics before they worked together to co-create rubrics. In short, students see rubrics as a standard or a guideline. When it comes to their assignments, students see the rubrics as a guide for completing their assignments, and refer to the entries in the marking criteria as targets for their own assignment completion as well as to make initial judgments about themselves. In peer assessment, the rubrics can be used to evaluate the completion of tasks by peers. Students even see the rubrics as a measure of one’s academic level. At the same time, however, students may feel that the grading rubrics are limited, and that it is biased to determine their own development according to the rubric, like a framework that restricts the student’s freedom of expression. More often than not, students may find the marking criteria confusing at times, as the entries on the marking criteria are generic and do not allow for targeted judgement and guidance for different students, and students may also be unsure of where they stand when referring to the marking criteria.

Interviewee 1: I think it is a standard by which students evaluate each task.
Interviewee 2: I think it is a rule but not strict.
Interviewee 3: It is like a guideline to measure how good or bad one’s academics are.

4.2. Perceptions of Co-creating Rubrics

This section focuses on what the students did in the co-creating rubrics, highlights how they felt about the process, and how they understood the process.

4.2.1. Students’ practice of co-creation of marking criteria

Students have to complete several steps to complete the co-creating rubrics. At first, they have to find out what are rubrics and tasks. Then, they have to review relevant examples of ready rubrics offered by the teacher. Next, students will co-create rubrics in small groups and discuss in small groups what criteria are in the rubrics, how much of those criteria should be accounted for, and the different levels of criteria. After that, students came up with a complete co-creating rubric. After the teacher revises this co-creating rubric, the students need to review and integrate it again to get the final version of the co-creating rubric. Finally, students can apply the final version of the rubrics in an assessment practice, and revise the rubrics again.

4.3. Perceptions after Co-creating Rubrics

This part mainly focuses on students’ perceptions of peer assessment and their perceptions of the rubrics after participating in the co-creating rubrics.

4.3.1. Perceptions of Peer Assessment after Co-creating Rubrics

In the student’s interview, he mentioned that his mood became calmer. The co-creating rubrics provided him more guidance in giving feedback to his peers, which made him less overwhelmed with how to comment on his peers, and thus his mood became calmer.

Student 1: Emotionally, I will be calmer and less impatient than before. With the co-creating rubrics, I will be more organized and clearer in my thinking when evaluating my peers, and then I will be calmer in my mood.

Analysis of the content of the above interviews revealed that, in general, students were more actively involved in peer assessment activities after participating in the co-creating rubrics. Students are more likely to be willing to give feedback to their peers and use the co-creating rubrics as a basis for evaluation and give structured feedback to their peers. In terms of completing assignments, students will also complete tasks based on the co-creating rubrics and will think more clearly and confidently about completing assignments. Also, students felt that the peer evaluation process would become more formal, structured and framed, and not as disorganized as it was before.
Student 1: I was more likely to give feedback to my peers based on its content before co-creating rubrics, after there were co-creating rubrics I was more likely to give feedback to my peers based on rubrics.

Student 2: With co-creating rubrics, I am more likely to be willing to give feedback to my peers.

Student 3: I will use the co-creating rubrics more to express the content of the peer feedback, rather than being a little wilder.

4.4. Perceptions of applying Co-creating Rubrics in Peer Assessment

Assessment: In order to understand students’ understanding of co-creating rubrics and peer assessment at different academic levels and the problems they encountered in applying co-creating rubrics to peer assessment, the authors made an analysis of students at three levels (high, intermediate and low).

4.4.1. Higher-achieving students

From the results of the interviews, both selected higher-achieving students actively participated in peer assessment activities after the co-creating rubrics, both in giving and receiving peer feedback.

Student 1: Assuming that my peers' suggestions are good, I would be willing to accept them, but I think I should consider the quality of my content first.

Student 2: After the co-creating rubrics, it seems that peers are more likely to point out the problems. When my peers point out my problems, I may think about it again, or have further communication with them, and discuss the reasons why my peers say I am not doing well in a certain place, and exchange opinions with each other.

Obviously, most of the higher-achieving students were able to master the use of co-creating rubrics in peer assessment very well. However, a common characteristic among them is that when receiving feedbacks given to them by their peers, they first think about their own content and the reasons why their peers give such advice. They have their own independent thinking and judgment skills and may question the opinions of their peers occasionally. Higher-achieving students will hold a critical attitude toward the evaluations and suggestions given to them by their peers.

5. Discussion

5.1. Summary of findings

This section focuses on a summary of the emotional, behavioral, and cognitive changes and impacts of students’ participation in peer assessment after co-creating rubrics.

5.2. Connection with literature

Combining with the findings and analysis of the study, this chapter then give a general discussion and further explore the causes behind the findings and provide plausible explanations to make the study comprehensive.

According to students’ perceptions before Co-creating Rubrics, of Co-creating Rubrics and after Co-creating Rubrics, the considerably changed perceptions can be found. The findings match those observed in earlier studies. As the previous research found that involvement in the applying rubrics and peer assessment process can lead to the active learning that students require in order to produce a quality final output. Before Co-creating Rubrics, Students’ perceptions of peer assessment were positive, neutral and negative, with perceptions of rubrics as a guide to completing assignments and sometimes posing restrictions on their performance, and some students saw the rubrics as more universal and not relevant to themselves. As to the-perceptions of Co-creating Rubrics, Students’ perceptions of peer assessment were expressed in three areas: practices, attitudes and understanding. In terms of practices, students normally completed the co-creating rubrics based on several steps, including learned the rule-making criteria, reviewed relevant examples of ready rubrics offered by the teacher and applied the final version of the rubrics in an assessment practice. In terms of attitudes, the attitudes held by students were more diverse, both positive and negative, such as feeling confused, interesting, having a clear sense of purpose and being engaged. In terms of understanding, students...
perceived peer assessment as a collaborative and self-exploratory process. After Co-creating Rubrics, students’ perceptions of peer assessment changed a lot, they were willing to give feedback to their peers, to express their opinions and to be more formal in their implementation; students’ perceptions of rubrics were more likely to want the personalized rubrics and to be concerned about the process of making the rubrics and the way them was used. Therefore, the findings of this study consist with the conclusion made by Fraile et al., they believed that students with the experience of co-creating the rubrics had rather higher levels of self-regulated learning and co-creating rubrics might affect students’ employment of learning strategies.

6. Conclusion

The purpose of this study is to investigate the impact of an assessment method that combines co-creating rubrics and peer assessment on EFL classes in higher education. The subjects of the study were mainly students of two classes of first-year English majors at the S University of Macao. The whole experimental period of the teaching experiment was two semesters.

This chapter mainly summarizes the results of this study and provides some suggestions and references for English teachers in higher education to improve the assessment methods in their teaching.

Acknowledgement

As time passes, my postgraduate studies at the Macao University of Science and Technology are coming to an end. During my two years in school, I have met many excellent students and teachers, learned a wealth of professional knowledge, and experienced a colorful campus life. This dissertation marks the end of a long and memorable journey. First of all, I would like to sincerely thank my supervisor, April. My heartfelt thanks to her for her consistent support and help during the writing of my dissertation. I would like to thank her for her patience help empathy and academic professionalism. She provided me with great opportunities and advice in writing my dissertation, and she also spent a lot of time reviewing my dissertation and providing me with constructive feedback to help me do a better job. I consider myself very fortunate to have April as my supervisor.

Secondly, I would like to express my gratitude to my roommate. I would like to thank her for her company in life for two years. During the dissertation writing period, my roommate accompanied me to the school library every day to collect materials and encouraged me when I was depressed. The joy that my roommates brought me washed away the misery that study and life brought me.

Thirdly, I would like to thank my parents. It is their continued support and understanding that has brought me to where I am today. Now that I am nearing graduation, they still respect my ideas and support my choices.

Finally, I would like to thank myself. I thank myself for the dedication and hard work I have been doing. In the days ahead, be firm and brave in the face of danger. Even if life and relationships are not enough as they should be, I hope I will always keep my original heart.

I would like to dedicate this dissertation to my 24 years old. The past is dark and untraceable, and the future is bright and shining.

References