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# The Influence of Peer Interaction on Emotion Regulation in the English Classroom

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This article reports on a classroom-based case study on emotion regulation (ER) in the English as a foreign language (EFL) classroom. In order to clarify the influence of peer interaction on ER, this study aimed to: (a) identify the types of emotions that the students experience in the EFL classroom, (b) determine the situations in English classes that elicit these emotions, (c) explore ER strategies employed by the students, and (d) examine the influence of peer interaction on ER. The participants were 26 non-English major first-year Japanese university students who attended my English class in the spring semester of 2022. They answered two open-ended questionnaires and the results were analyzed both quantitatively and qualitatively. The students experienced a variety of negative and positive emotions and regulated their emotions using different ER strategies in various specific situations in the English classroom. They also apprehended the positive effects of peer interaction on emotion regulation (ER), such as a decrease in negative emotions and an increase in positive emotions. This study highlights the potential benefits of peer interaction in ER, and the findings contribute to ongoing discussions on the role of interaction and the importance of ER for learners in an EFL classroom.

本研究は、外国語としての英語の授業内における感情調節に関する事例研究である。本研究の目的は次の4つである。(a) 生徒が英語の授業において経験する感情の種類を明らかにすること、(b) 英語の授業のどのような状況で、そのような感情が引き起こされるかを明らかにすること、(c) 生徒が用いる感情調整戦略を探ること、(d) 感情調整に及ぼす仲間の相互作用(ピア・インタラクション)の影響を検討することである。本研究の参加者は、2022年春学期に筆者の英語の授業に出席した、英語専攻でない日本人の大学1年生26名である。学生たちは2つの自由記述式質問表に回答し、その結果を量的・質的に分析した。その結果、学生たちは様々なネガティブな感情とポジティブな感情を経験し、授業内の様々な具体的な状況において異なるER戦略を用いて感情を調節していた。また、学生たちは、否定的感情の減少や肯定的感情の増加といった、ピア・インタラクションが感情調節に及ぼす肯定的な効果を認識していた。本研究は、感情調整におけるピア・インタラクションの潜在的利点を明らかにすることによって、外国語教室におけるインタラクションの役割と学習者にとっての感情調整についての研究に貢献するものである。

## Keywords

classroom-based case study, learner emotions, emotion regulation, self-emotion regulation, peer interaction  
授業内事例研究、学習者の感情、感情調整、自己感情調整、ピア・インタラクション

## Introduction

Throughout more than 20 years of teaching experience, I have seen that my students experience a variety of emotions in my English classes. Some students seem to feel negative emotions such as anxiety and shame during speaking activities and try their best to overcome them. Other students develop interest and confidence in English through the enjoyment of working together with their peers in group activities. In addition, through the many group activities in my classes, the students experience a lot of positive emotions and peer interaction also seems to have a positive impact on the students' emotions and emotion regulation (ER). Learners need to regulate their emotions appropriately through interactions with others (self-emotion regulation) in order to enhance their autonomy (Kato & Mynard, 2015). Emotion regulation can be defined as any attempt to modify negative and positive emotions (Gross, 2015) and learners often use various ER strategies in foreign language learning (Bielak & Mystkowska-Wiertelak, 2020). Prior research has emphasized the necessity for learners to appropriately regulate their emotions through

interaction for enhancing their autonomy (Kato & Mynard, 2015). Kato and Yamashita (2021) point out the importance of interaction with peers in the English classroom because it presents learners with opportunities to reflect on, and become aware of their individual learning experiences, and share them with peers. This implies that peer interaction may also have a positive impact on learners' ER. The English as a foreign language (EFL) classroom is an effective learning space in which learners can be trained to regulate their emotions appropriately through peer interaction.

Although various studies on learners' ER and ER strategy use (Bielak & Mystkowska-Wiertelak, 2020; Oxford, 2017) and peer interaction in language learning (Donato, 1994; Ohta, 2001; Swain, 2000; van Lier, 2004) have been conducted, there have been few studies on the influence of peer interaction on ER in the EFL classroom. As a teacher, I need to know more about my students' emotions and the influence of peers on their emotions in order to better support them in the classroom. I believe that with appropriate support from teachers, students can better regulate their emotions by themselves and through peer interactions, which may provide an opportunity to develop their autonomy. Therefore, the purpose of this study is to investigate the influence of peer interaction on students' ER.

## **Literature Review**

### ***Learner Emotions***

Past research on learner emotions and ER has reported that the emotions experienced while learning a foreign language are a major factor in individual differences. Foreign language anxiety (Horwitz et al., 1986) has positive aspects that promote learning as well as negative aspects that inhibit learning (Dewaele & MacIntyre, 2014). Regarding the negative aspects, foreign language anxiety has been shown to negatively affect four language skills (Cheng et al., 1999; Lu & Liu, 2011). Many researchers have proposed approaches to reduce learners' anxiety. These include, for example, building a comfortable learning environment (Matsuda & Gobel, 2004), reducing ambiguity in the classroom (Dewaele & Ip, 2013), developing learning strategies, and enhancing learner confidence by increasing opportunities for output (Lu & Liu, 2015). On the other hand, although anxiety is typically a negative trait, studies have also shown positive aspects in that learners with high anxiety tend to listen more attentively to teacher's instructions (Dewaele & MacIntyre, 2014; Oxford, 1999) and that anxiety helps learners maintain their motivation (Lu & Liu, 2011). Other studies have also examined the relationship between foreign language anxiety and other variables, such as motivation, gender, self-efficacy, and self-confidence, and found that anxiety is closely related to them (Dewaele & Ip, 2013; Piniel & Csizér, 2015; Ueki & Takeuchi, 2012).

In addition to studies focused on anxiety, Dewaele and MacIntyre (2014) identified a positive aspect called "foreign language enjoyment (FLE)." FLE is a positive emotion that has a positive effect on foreign language learning. Dewaele and Alfawzan (2018) argue that anxiety and enjoyment can productively interact with each other though they are independent emotions and that it is more important to increase enjoyment than to diminish anxiety in language learning. It has also been noted that FLE is related to the teacher's personality, teaching skills, and the frequency of the teacher's use of the target language in class (Dewaele & Dewaele, 2020; Dewaele et al., 2019). These findings indicate that both teacher and peers are a major influence on learners' emotions.

Although teachers' support for learners' emotions is of course necessary, I also believe that learners themselves need to regulate their own emotions in order to improve their autonomy. Therefore, it is important to consider what kind of support teachers should provide to learners in order to enable them to regulate their own emotions.

### ***Emotion Regulation***

ER is a crucial factor in promoting learner autonomy (Tassinari, 2016). ER refers to controlling the emotions that one experiences, when they occur, and how they are felt or expressed (Gross, 1998) and also to any attempt to modify negative and positive emotions that a person experiences (Gross, 2015). Gross considers ER as a cognitive process and classifies five types of emotion regulation strategies that human beings use in their daily lives: (a) Situation Selection (modifying emotions by approaching or avoiding stimuli or persons that are expected to elicit desirable or undesirable emotions), (b) Situation Modification (changing the situation itself), (c) Attentional Development (changing the direction of attention such as distraction), (d) Cognitive Change (changing the way of perceiving emotions or thoughts), and (e) Response Modulation (controlling emotional reactions). Gross (2015) also claims that ER has both intrinsic and extrinsic aspects, defining "intrinsic emotion regulation" as attempts to regulate one's own emotions and "extrinsic emotion regulation" as an interest in regulating others' emotions, for instance, parent-child interaction. In foreign language learning, previous studies have also shown that learners use a variety of strategies for ER, such as distraction, acceptance, breathing deeply, and seeking social support (Bielak & Mystkowska-Wiertelak, 2020; Oxford, 2015; Webster & Hadwin, 2015). Bielak and Mystkowska-Wiertelak (2020) investigated the ER strategies of their Polish students, with the vignette methodology of "Managing Your Emotions for Language Learning (MYE)" developed by Gkonou and Oxford (2016). They found that the students sometimes experienced both positive and negative emotions simultaneously. The ER strategy which students most used was "acceptance" (classified as a "cognitive change"). The next most popular strategy was to get on with the task, "task enactment," classified as "situation modification." The choice of ER strategies was influenced primarily by the specific situation, learning context, and participants' characteristics. One limitation of Bielak and Mystkowska-Wiertelak's study (2020) is that the situations were scenario-based and hypothetical, so it is likely that learner's emotions and ER in actual situations would be different. To investigate their emotions and ER strategies, I devised an intervention which involved talking with students about the emotions they may have experienced in my English class and asking them to write down their emotions twice during the spring semester. I hoped that I would be able to support students better in class by investigating their emotions. By conducting this study, I thought that I might be able to increase my students' awareness of ER in real time in the classroom and even help them learn ER strategies from each other.

### ***Peer Interaction***

The importance of interaction was proposed by Vygotsky and his colleagues. They argue that learning takes place firstly through interaction in the learner's "Zone of Proximal Development" (ZPD; as cited in van Compernelle, 2015). Bruner (1985) suggested that scaffolding occurring through interaction within the ZPD is essential in cognitive development. Although Vygotsky's ideas especially focused on children's educational potential, his ideas have been also applied in the field of L2 development. According to

sociocultural theory, which developed from Vygotsky's ideas, the development of human cognitive functions derives from social interactions and that through participation in social activities, individuals are drawn into the use of these functions (VanPatten et al., 2020). In foreign language education, the positive impact of peer interaction and scaffolding has been demonstrated by some researchers (Ohta, 2001; Swain, 2000). In general, scaffolding refers to support from the educator or more competent peers (Lantolf & Thorne, 2006). "Collective scaffolding," however, has also been found to occur between students with similar proficiency levels (Donato, 1994). Furthermore, some studies have shown that collective scaffolding can result in proficiency development even when a learner's peers have a lower level of proficiency (van Lier, 2004).

Peer interaction provides scaffolding not only in learning but also in psychological aspects. Donato (1994) found that peer-mediated exercises help learners manage frustration and risk and interaction might relieve their stress and anxiety. This finding is a good example of peer interaction as a tool for scaffolding ER. It has been noted that language classes providing learners with substantial peer interaction are suitable for helping them develop autonomy (Kato & Mynard, 2015; Kato & Yamashita, 2021; Mynard & Carson, 2012; Shelton-Strong, 2018). As mentioned above, peer interaction provides learners with the opportunity to reflect on, share, and become aware of their learning experiences (Kato & Yamashita., 2021). Learners can have the opportunity to assess themselves through reflection, sharing, and awareness of their experiences (Shelton-Strong, 2018).

Although the influence of peer interaction on aspects other than language learning has been highlighted, there have been few empirical studies of the influence of peer interaction on ER. Examining the influence of peer interaction on ER could contribute to expanding the role of interaction. In addition, by investigating the influence of peer interaction on ER, I hope to expand or deepen our understanding of the significant role that peer interaction can play in language learning to promote autonomy.

## **Research Questions**

For this study, I set the following four research questions:

1. What types of emotions did students experience in English classes during the spring semester?
2. When or in what situations did the students experience those types of emotions?
3. How did the students regulate their emotions?
4. What influence does peer interaction have on emotion regulation?

## **Methods**

### ***Participants***

The participants were 26 non-English major first-year Japanese university students (11 male and 15 female students) in a required English class. The class was conducted by me once a week, for a total of 15 lessons. The student's proficiency level in English varies from A1 to B1 on the CEFR (Common European Framework of Reference for Language) scale. This required first-year English class has in-class activities which provide the students with many opportunities to interact with each other. In groups, they engaged in speaking activities, group writing, group presentation, and discussion. In this study, the students were divided into four groups of 4 and two groups of 5 for interactive activities. The groups were changed twice in the spring semester by drawing lots.

## Materials

I created and used two bilingual, open-ended questionnaires in Japanese and English as shown in Table 1. The questionnaires consisted of the following six questions that correspond to the research questions (RQ) 1 through 4. (The specific research question is noted in parentheses.)

**Table 1. Questions in Questionnaires 1 and 2**

Questions in Questionnaires 1 and 2
1. What types of emotions have you experienced in this English class? (RQ 1)
2. Is that emotion that you experienced in the situation negative, positive, or both? (RQ 2)
3. When or in which situations in this class did you feel that emotion strongly? (RQ 1)
4. How did you manage or control that emotion (ER)? (RQ 3)
5. How did that emotion that you experienced in the situation change through peer interaction or did peer interaction help or influence ER? (RQ 4)
6. Do you think that peer interaction helped with ER? (RQ 4)

Regarding Question 1, a list of the types of basic and applied emotions in Plutchik's "Wheel of Emotions" (Semeraro et al., 2021) was included on the questionnaire sheet for reference (See Appendix). The students provided descriptive responses from Questions 1 to 5 freely in Japanese. The only difference between Questionnaire 1 and 2 is Question 6. The answer choices for Question 6 of Questionnaire 1 were "Yes" or "No". In Question 6 of Questionnaire 2, a four-point Likert scale was used: "Very helpful," "Helpful," "Not very helpful," "Not at all helpful," without a neutral point in order to prevent students from giving a neutral response.

These open-ended questionnaires were conducted as a part of an in-class activity to help the students reflect on their emotions in English learning. The students were asked to complete a consent form for the use of their responses in these questionnaires after I explained the purpose of this study to them.

## Procedures

The participants completed Questionnaire 1 in week 7 and Questionnaire 2 in week 14. I used the following procedure in Table 2. The figures in parentheses indicate the time required for the task.

**Table 2. Questionnaire Procedure**

Procedures
<u>In Lesson 7 of the spring semester</u>
1. I explained the relationship between English learning and emotions, ER, and peer interaction. (5 min)
2. The students completed Questionnaire 1 reflecting on Lesson 1 through Lesson 7. (20 min)
3. I collected Questionnaire 1 and commented on it.
<u>In Lesson 14 of the spring semester</u>
1. I returned Questionnaire 1 to the students and distributed Questionnaire 2.
2. The students completed Questionnaire 2 referring to Questionnaire 1 and reflecting on Lesson 8 through Lesson 14. (15 min)
3. I collected both Questionnaire 1 and 2 in order to analyze them.

As for the emotions, I asked the students to reflect on Lesson 1 through Lesson 7 and write down at least the four or five most memorable emotions, whether these emotions were positive or negative, and the situations in which they experienced them. In Questionnaire 2 administered at the end of semester, I asked the students to reflect on Lesson 8 through Lesson 14 and write down any new emotions and any situations in which they experienced those emotions in Questionnaire 1. I added verbal instruction to the students to refer to the types of basic and applied emotions in Plutchik's "Wheel of Emotions" on the sheets of Questionnaire 1 and 2 and to describe any other emotions that they might have. After collecting Questionnaire 1, I read the students' responses and commented on the questionnaire if there was anything that I wanted to know more about, for example, the details of the influence of peer interaction and changes in negative and positive emotions. In Lesson 14, the students were asked to reflect on Lesson 8 through Lesson 14, to add new emotions to Questionnaire 2, if any, and to respond to my comments in Questionnaire 1.

### ***Analysis***

I used a mixed-methods approach in order to analyze the students' responses. I first tabulated and presented as numerical values the data obtained from Questions 1, 2, 3, and 6 of Questionnaire 1 and 2. Next, I categorically analyzed the qualitative data in the students' descriptive responses to Questions 3, 4, and 5 of Questionnaire 1 and 2. In order to do this, I coded the responses and made a thematic analysis, arranging the themes primarily in tables. For Question 4, I referred to Gross's (2015) taxonomy of ER strategies for the major categories, and the detailed classification of ER strategies by Bielak and Mystkowska-Wiertelak (2020) was used as subcategories. I analyzed their responses and compiled them into tables. The students' comments in Japanese have been translated into English by me.

## **Results and Discussion**

### ***Types of Emotions***

According to the responses to Question 1 and 3 in both Questionnaires, the students (N=26) experienced various types of emotions over the 14-week semester as shown in Table 3. The numbers indicate how many students experienced the emotion.

**Table 3.** *Types of Emotions Experienced by Students*

<b>Types of emotions: 32 types</b>			
<b>Negative emotions: 17 types</b>		<b>Positive emotions: 15 types</b>	
Anxiety	15	Joy	17
Apprehension	9	Trust	9
Shame	9	Anticipation	6
Boredom	3	Interest	5
Distraction	3	Aggressiveness	4
Guilt	3	Surprise	4
Disgust	2	Serenity	3
Sadness	2	Delight	2

Types of emotions: 32 types			
Negative emotions: 17 types		Positive emotions: 15 types	
Terror	2	Hope	2
Fear	1	Pride	2
Tension	1	Admiration	1
Anger	1	Amazement	1
Annoyance	1	Curiosity	1
Disappointment	1	Love	1
Despair	1	Optimism	1
Envy	1		
Remorse	1		
Total	56		59

As for Research Question 1 corresponding to Questions 1 and 3: “What types of emotion did students experience in English classes during the spring semester?,” the students reported experiencing a total of 32 types of emotions, 17 types of negative emotions and 15 types of positive emotions. Overall students recorded slightly more instances of positive than negative emotions. The most common negative emotion experienced by the 16 students was “anxiety,” which many researchers have identified as the emotion that is commonly experienced by learners in foreign language learning (Dewaele & MacIntyre, 2014; Horwitz, 2001). All the students in my English class perceived anxiety as a negative factor that hinders learning. A certain number of the students experienced the emotions of “apprehension” and “shame,” which are also familiar in foreign language learning.

In terms of positive emotions, although Dewaele and MacIntyre (2014) mentioned “foreign language enjoyment” as a representative of such emotions, the emotion of joy was the most frequently experienced and no students mentioned “enjoyment.” This was probably because “enjoyment” was not listed in the guideline set of positive emotions (see Appendix) and most students responded by referring to Plutchik’s emotions even though I verbally explained to the students that they could write any emotion other than those listed. However, some students indicated in their responses to Question 5 of both questionnaires about the influence of peer interaction on ER that they felt “enjoyment” in learning English through interaction with their peers. The following are some examples.

### *Examples of students’ comments*

**Student I:** During the group activity, there were things that I did not know, and when I said I did not know, the group member gave me more information about it than I expected, which surprised me much more. At the same time, I felt enjoyment.

**Student H:** (In group activities) enabled me to have more diverse perspectives and made learning more enjoyable. I like English class more.

**Student R:** It was interesting to hear other groups’ opinions, which were different from our own. I enjoyed sharing these ideas with our group members and making use of them next time.



These comments highlight how students experienced “enjoyment” through peer interaction in group activities. The students’ responses revealed that, as Imai (2010) also pointed out, they experience a variety of emotions in the classroom including enjoyment.

### Specific Situations

Tables 4 and 5 summarize in which situations in the English classes from Lesson 1 through Lesson 14 the students experienced the emotions listed in Table 3. The specific situations in which the students experienced the negative emotions were categorized into 12 situations and are presented in order of number from highest to lowest in Table 4 and the situations in which they experienced the positive ones are shown in Table 5.

**Table 4. Specific Situations and Negative Emotions Experienced by the Students**

Situations	Negative emotions experienced by the students in the situation (The horizontal axis lists the negative emotions in alphabetical order)				
When failing, making a mistake, not doing well (19)	Anxiety (2) Guilt (5)	Apprehension (1) Shame (7)	Despair (1) Terror (1)	Disappointment (1)	Distraction (1)
When there was something that they did not understand/ know (12)	Anxiety (3) Shame (2)	Apprehension (2) Remorse (1)	Despair (1)	Guilty (2)	Sad (1)
During group activities (11)	Anxiety (4)	Apprehension (5)	Guilty (2)		
When speaking up, giving a presentation in class (8)	Anxiety (3)	Apprehension (2)	Fear (1)	Shame (1)	Tension (1)
When asked a question by the teacher (8)	Anxiety (4)	Apprehension (1)	Fear (1)	Disgust (1)	Distraction (1)
When given assignments, homework (5)	Anger (1)	Annoyance (1)	Anxiety (2)	Disappointment (1)	
Before class, activities, assignments, and tests (5)	Anxiety (3)	Apprehension (1)	Disgust (1)		
When noticing classmates’ high/ low English proficiency (3)	Apprehension (1)	Distraction (1)	Envy (1)		

<b>Situations</b>	<b>Negative emotions experienced by the students in the situation</b> (The horizontal axis lists the negative emotions in alphabetical order)	
When noticing the lack of their own English skills (2)	Guilty (1)	Shame (1)
When working alone (2)	Boredom (2)	
When scolded by the teacher (1)	Terror (1)	
For the fact that I am the only sophomore in the freshman class (1)	Shame (1)	

Table 4 shows that the students experienced different types of negative emotions in various situations. The most frequently mentioned situations were those in which they felt that they failed, made mistakes, and did not do well, for instance, when they could not listen to English, when they made a mistake in English, or when their answer was wrong. The next situation that caused the negative emotions most was “when there was something that they do not understand and know, for example, when they could not understand English while listening, when there were English words or expressions that they did not know, or when they did not know what to say in English.” In terms of the situation of “during group activity,” the students had negative emotions about their interpersonal skills. For example, the students doubted whether they could communicate well, get along with other classmates, or cooperate with other classmates well.

**Table 5. Specific Situations and Positive Emotions Experienced by the Students**

<b>Situations</b>	<b>Positive emotions experienced by the students in the situation</b> (The horizontal axis lists the positive emotions in alphabetical order)				
During group activities (38)	Aggressiveness (2) Love (1) Trust (11)	Anticipation (3) Optimism (1)	Delight (1) Pride (1)	Interest (4) Serenity (2)	Joy (11) Surprise (1)
When feeling successful, improvement, doing well (14)	Aggressiveness (1) Pride (1)	Delight (1)	Hope (1)	Joy (9)	Optimism (1)
When learning, gaining new knowledge (7)	Admiration (1) Surprise (1)	Amazement (1)	Curiosity (1)	Interest (2)	Joy (1)

Situations	Positive emotions experienced by the students in the situation (The horizontal axis lists the positive emotions in alphabetical order)				
During English class (7)	Aggressiveness (1) Serenity (1)	Anticipation (2)	Curiosity (1)	Joy (1)	Serenity (1)
When praised by teacher (4)	Anticipation (1)	Delight (1)	Joy (2)		
When having friends (2)	Aggressiveness (1)	Joy (1)			
When expecting the improvement (2)	Anticipation (1)	Delight (1)			
When noticing classmates' high English skills (2)	Admiration (1)	Surprise (1)			

Regarding the specific situations when the students experienced positive emotions, the most positive emotions were experienced “during group activities.” Example group activities included having dialogue and exchanging ideas with group members, working together, and helping each other. As Table 5 shows, the students experienced most types of positive emotions during group activities. This indicates that group activities, that is peer interactions, have an important role in increasing positive emotions. As for “Aggressiveness,” it was translated in Japanese as the meaning of “very motivated to be successful and eager to achieve what they want”, so it is likely that students chose this word with the image of “active, proactive, or positive attitude” in mind, rather than “attack” or “threatening attitude.” It is also clear from the students’ descriptions that they consider “Aggressiveness” to be a positive emotion and that students are using it in that sense. For example, Student D reflected in the “Aggressiveness” section, “*I learned that it is important to express my opinion actively and decided to try harder to be more positive.*”

With regard to Research Question 2 (“When or in what situations did the students experience those types of emotions?”), the students experienced various negative and positive emotions in different situations in English classes. While some students felt a variety of positive emotions “during group activities”, other students simultaneously reported different emotions in the same situation, for example, “I experienced anxiety and distraction when the teacher picked me to answer the question” and “I experienced both fear and shame when speaking up in front of the class.” From these comments, the students seem to face multiple emotions in a particular situation rather than a single emotion. Even in similar situations, the emotions experienced by different individuals varied. For example, “when noticing a classmate’s high English skills,” one student recorded “envy” as a negative emotion (see Table 4) while another student noted “surprise” as a positive emotion (see Table 5). However, it was not possible to determine what caused this difference in emotion, for example, whether it was due to personality, family background, or educational environment. It would be good in future studies to expand on students’ answers by doing follow-up interviews.

## *Students' Emotion Regulation*

The students' responses to Question 4, which corresponds to Research Question 3: "How did the students regulate their emotions?", are categorized in Table 6 based on Gross's ER strategy taxonomy (2015) and the classification of ER strategy by Bielak and Mystkowska-Wiertelak (2020). The students utilized the ER strategy of "cognitive change" followed by "situation modification". This result was identical to the results in Bielak and Mystkowska-Wiertelak's study (2020).

**Table 6.** *Students' Emotion Regulation Strategies*

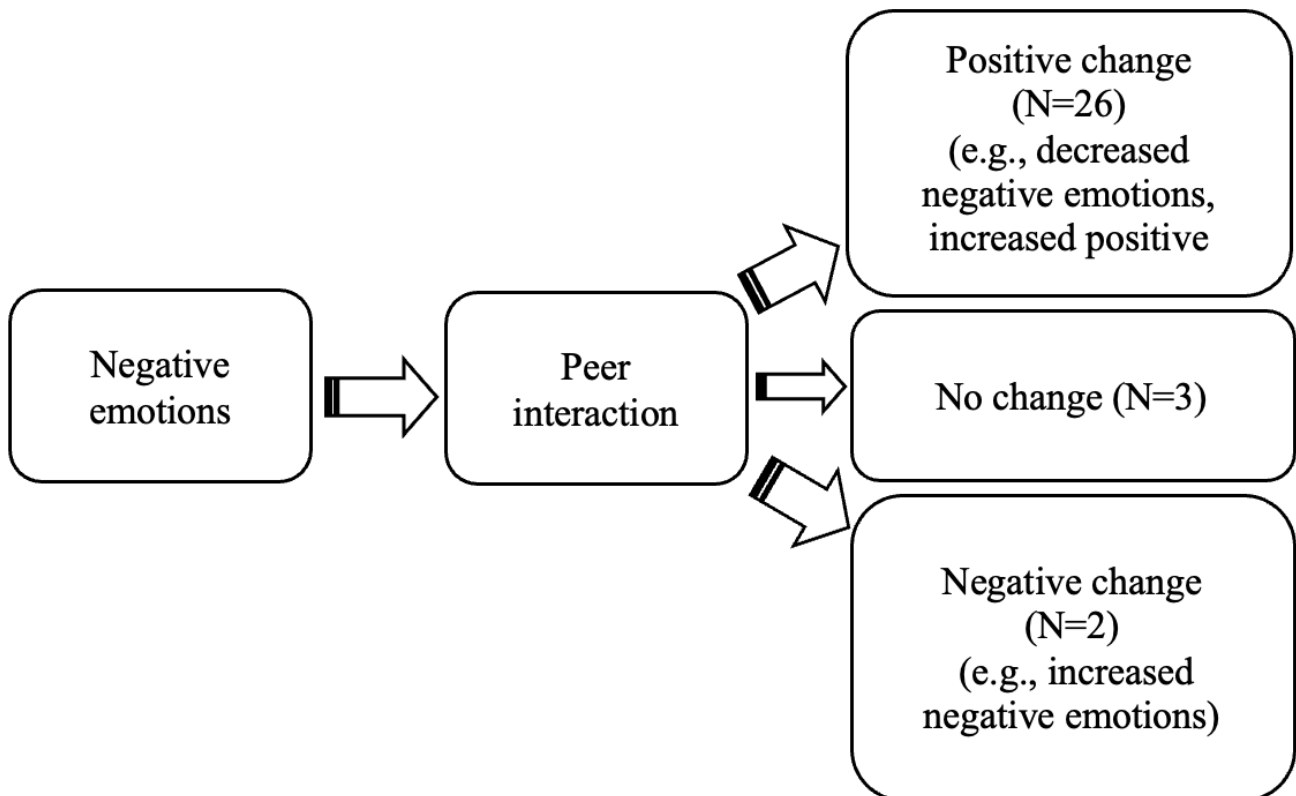
<b>Students' emotion regulation strategies</b>	
<u>Strategy Categories</u>	<u>Subcategories</u>
COGNITIVE CHANGE (48)	<u>Intrinsic ER</u> <ul style="list-style-type: none"> <li>• Acceptance (5)</li> <li>• Reassurance (6)</li> <li>• Effort-oriented decision (17)</li> <li>• Wishful thinking (13)</li> <li>• Self-consequating and goal-orienting (5)</li> </ul>
SITUATION MODIFICATION (28)	<u>Intrinsic ER</u> <ul style="list-style-type: none"> <li>• Task enactment (9)</li> </ul> <u>Intrinsic/ Extrinsic ER</u> <ul style="list-style-type: none"> <li>• Seeking help (8)</li> <li>• Social sharing (11)</li> </ul>
RESPONSE MODULATION (3)	<u>Intrinsic ER</u> <ul style="list-style-type: none"> <li>• Simple meditation (1)</li> <li>• Resting (1)</li> <li>• Doing another thing (1)</li> </ul>
GIVING UP (1)	<u>Intrinsic ER</u>
ENDURING THE SITUATION (1)	<u>Intrinsic ER</u>
DOING NOTHING (1)	<u>Intrinsic ER</u>

*Note.* Numbers in parentheses are the number of people who used the strategy.

Under the strategy of "cognitive change" (Gross, 2015), 17 students made an "effort-oriented decision" (Bielak & Mystkowska-Wiertelak, 2020, p. 10), such as making more effort and studying harder. Thirteen students chose the means of "wishful thinking," which is "similar to reassurance in projecting a favorable future outcome, but it relied on luck rather than one's abilities" (Bielak & Mystkowska-Wiertelak, 2020, p. 10), and switched from negative to positive thinking. Six students told themselves that they could do it (reassurance). Five students accepted their emotions as they are. The other five students' ER strategies were related to "self-consequating and goal-orienting" (Bielak & Mystkowska-Wiertelak, 2020, p. 10) whereby they took what happened as a positive and decided to apply it to their future. The second ER strategy most experienced by the students was "situation modification" (Gross, 2015). Regarding "task enactment" (Bielak & Mystkowska-Wiertelak, 2020, p. 10) the students who made a mistake and felt shame looked up the word in dictionaries or

apps in order to overcome their negative emotion of shame. Some students searched for information on the internet and took notes when they did not understand something and felt anxious. Eleven students' use of ER strategy was related to "social sharing" (Bielak & Mystkowska-Wiertelak, 2020, p. 10) such as working and discussing with classmates, or group activities, that is, peer interaction. Eight students sought help or advice from their classmates in order to regulate negative emotions. The results indicate that many students used extrinsic ER strategies. This suggests that peer interaction is involved in ER and also has a positive impact.

Overall, these results show that the students used a variety of ER strategies to regulate their negative emotions in specific situations in this English class. Most students used "cognitive change" and intrinsic ER, for example, "effort-oriented decision," "wishful thinking," and "task enactment." "Social sharing," such as peer interaction in English class, is considered extrinsic ER that Gross (2015) likened to parent-child interaction. I also found that peer interaction such as working with classmates had some positive impact on student ER. This suggests that they genuinely enjoyed engaging in group activities. In particular, the strategy of "seeking help" from peers produced positive emotions for the students who were asked. Thus, negative emotions were positively transformed through peer interaction. "I began to enjoy doing assignments to teach my friends when I was asked and boredom turned into enjoyment," was one perspective that students offered (Student E), indicating that ER strategy of seeking help can be connected to the ER of the person to whom help is offered. Student peer interaction in the group activity itself brought about some positive changes to their ER. Therefore, for extrinsic ER to be successful, the relationship with others, that is peer interaction in the classroom, can be considered to play an important role in the classroom.



Note. Numbers in parentheses are the number of people who perceived these changes.

Figure 1. Changes in Negative Emotions through Peer Interaction

## Influence of Peer Interaction on ER

As summarized in Table 4, the students generally used a variety of adjustment methods to regulate their negative emotions. With the exception of “seeking help” and “social sharing,” the students regulated their emotions by themselves. In this class, where group activities were common, many students used the strategies of “seeking help” and “social sharing.” This suggests that peer interaction plays an important role in students’ ER. In order to see the influence of peer interaction on ER, the students were asked if they felt any change in their negative and positive emotions through peer interaction (Question 5 in Questionnaire 1 and 2 corresponding to Research Question 4: “How did peer interaction help or influence ER?”). The changes in the emotions that the students felt through peer interaction are shown in Figures 1 and 2.

According to the students’ responses to Question 5, three patterns of change were observed in negative emotions through peer interaction: positive changes (e.g., decreased negative emotion, increased positive emotions), negative changes (e.g., increased negative emotions), and no change. As for positive changes, 26 students perceived positive changes about their negative emotions through peer interaction. Examples are:

**Student E:** As we got to know each other, we began to voice our opinions to each other, which led to more lively discussions, and I felt like I was getting to know the boys in the same group, so my anxiety gradually turned to joy.

**Student C:** I was able to make friends with others in the same group and enjoyed the sense of cooperation and togetherness, so I have less apprehension.

**Student K:** Classmates in my group gave me advice on what I didn’t understand, so I felt a little more confident.

However, depending on the type of negative emotion, three students did not perceive any change and two students perceived a negative change, for example:

**Student B:** I lost confidence in my English when I was being taught English by group members.

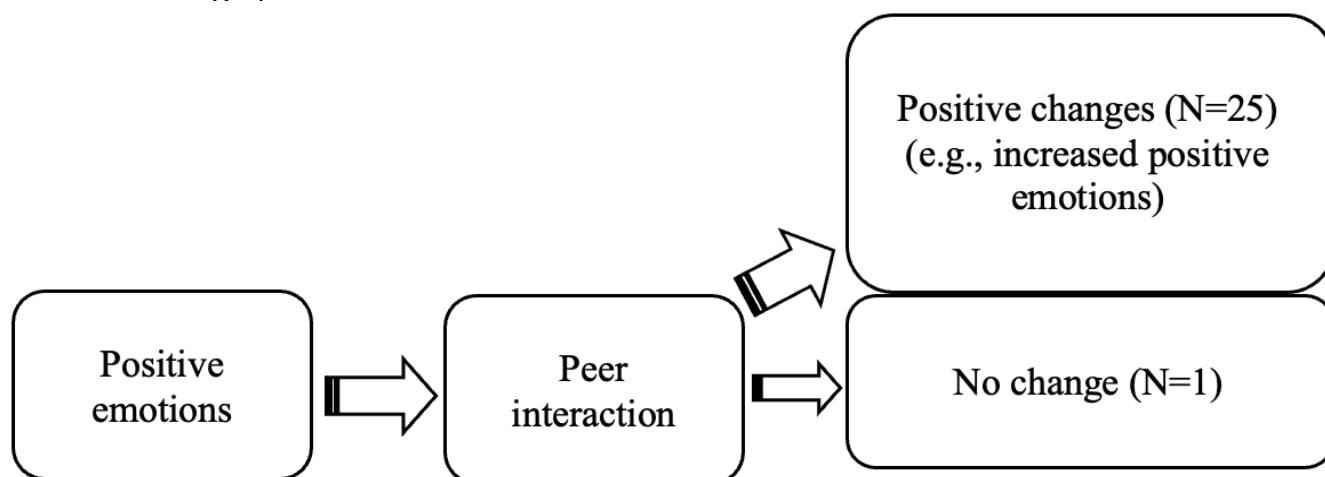
**Student P:** No one blamed me for forgetting the assignment, but I was concerned that I was disturbing harmony.

In addition to the above, most students noted a decrease in negative emotions such as “tension,” “shame,” as well as “fear” and an increase in positive emotions such as “ease,” “anticipation,” and “optimism.” Increases in “courage” and raised “aspiration” were also reported. Negative emotional effects, for example, losing confidence, and having concern were reported by some students too, as noted in the comments above.

In response to Question 3 of both Questionnaires (When or in which situations in this class did you feel that emotion strongly?) which was a review of the 14 classes, the students did not point to negative emotions during the group activity (see Table 4), but two students noted that they had negative emotions through peer interaction when reflecting on the influence of peer interaction. From the holistic perspective of 14 classes, the negative emotions that two students experienced through peer interaction may not have been strong enough emotions to impress the students because they did not point them out in Question 3. However, in Question 5, these students stated that they experienced these negative feelings through peer interaction. This means that from the

micro perspective of peer interaction, the emotions that the students experienced varied. This shows that the students' emotions are constantly changing depending on the time and situation. Thus, a more in-depth analysis of students' emotions would require a more micro-level investigation, such as at each class or the level of individual activities. This could be done, for example, through learners' journaling about their emotional lives with learning and using English both inside and outside the classroom.

As for changes in positive emotions through peer interaction, 25 students noted positive changes in some positive emotions and only one student recorded no change in a positive emotion through peer interaction.



Note. Numbers in parentheses are the number of people who perceived these changes.

Figure 2. Changes in Positive Emotions through Peer Interaction

From the students' comments, positive emotions changed more positively (e.g. increased positive emotions) or did not change. As for the positive changes:

**Student M:** I was able to tell my opinions to my classmates, which changed my expectations to more positivity.

**Student N:** I was happy to see that the atmosphere of the group was improved by people actively speaking up. Although I was not good at expressing my own opinions, I wanted to be helpful to the members by speaking up. Increased expectations.

**Student O:** I felt that I could come up with many more ideas than I could alone and that it was more fun to work together to create them. Increased confidence.

**Student E:** I think that we created a relationship of trust and through sharing opinions that we had not considered, we eventually came to respect each other. Respecting each other also gave us confidence.

As noted in the students' comments, many of them perceived an increase in the same positive emotion. Student M realized that her expectations became more positive during group activities. Some students perceived the occurrence of new emotions such as respect and confidence through peer interaction with respect to the positive emotional change. ER, therefore involves not only the regulation of negative emotions, but also the regulation of positive emotions, in order to make them more effective for language learning.

As for Question 6 (Do you think that peer interaction helped with ER?), nearly all students indicated that peer interaction had a positive impact on their ER (see Table 7).

**Table 7.** *Students' Perception of Whether Peer Interaction Helped ER*

Whether peer interaction helped ER			
Very helpful	Helpful	Not very helpful	Not at all helpful
9	16	1	0

In addition, the students' responses to Question 5 (How did that emotion that you experienced in the situation change through peer interaction or did peer interaction help or influence ER?) were analyzed using thematic analysis to determine what elements or characteristics of peer interaction positively or negatively affected the students' emotions. Based on the student's descriptive responses, 10 different elements or characteristics of peer interaction emerged as a result of coding based on the words that characterized peer interaction (see Table 8).

**Table 8.** *Elements of Peer Interaction That Changed the Emotions*

List of elements and characteristics of peer interaction			
1. Attentive listening	2. Collaborative work	3. Dialogue	4. Empathy
5. Feedback	6. Fellowship	7. Good atmosphere	8. Help each other
9. Intimate relation	10. Sharing		

*Note.* Elements and characteristics of peer interaction are listed in alphabetical order.

In particular, the words "dialogue," which includes discussion and communication, and "collaborative work" were often used in the students' comments. For example:

**Student G:** We shared unclear things through communication so I felt less anxious.

**Student V:** We teach and help each other and I enjoy collaborative work.

**Student A:** In this class, we had a lot of speaking and reading activities (collaborative work) and group discussions, which helped me gain confidence.

**Student W:** Everyone in the group consoled me that this problem was difficult (Sharing/ Empathy), which made me less fearful.

**Student I:** The group members not only gave me the correct answers but also explained why they were correct (Feedback/ Help each other). That helped me understand better.

As can be seen from these comment examples, the elements of peer interaction also had a positive impact on English learning as well as emotions.

The fact that the students commented that they felt some positive changes in their negative emotions suggests that peer interaction primarily affected "cognitive changes" in the students' ER. The students mentioned that the elements and characteristics of peer interaction, such as dialogue, collaborative work, and empathy, had a positive change in decreasing their negative emotions and increasing their positive emotions. However, this does not mean that their negative emotions had completely disappeared. Dewaele and MacIntyre (2014) argued that learners have anxiety and enjoyment in learning a foreign language, but that the two exist independently. The presence of different emotions in the same situation and the fact that some students experienced both a decrease in negative emotions along with an increase in positive emotions show that each emotion



exists independently. It is not that students' negative emotions disappeared through peer interaction, but rather that positive emotions became more dominant than negative emotions due to the positive influence of peer interaction. Moreover, most students noted some changes in positive emotions as well as in negative emotions. The positive changes through peer interaction, for example, increasing positive emotions such as "joy" and "confidence," can lead to cognitive changes brought about by peer interaction. This is one of the notable positive influences of peer interaction.

Not all of the students noted only positive influences of peer interaction in their ER. However, from their descriptions in the questionnaires, it is possible to say that peer interaction contributed positively to the students' ER. As 25 out of 26 students said that peer interaction was beneficial for ER, even if peer interaction caused students to have negative emotions, it may have helped them regulate those negative emotions again depending on the quality of peer interaction. As in previous studies (Donato, 1994; Kato & Yamashita, 2021), this research confirms that peer interaction provides a positive influence as a scaffolding for the psychological aspect of learner emotions as well.

It is not possible to accurately identify every change in emotion because students' emotions are fluid and dynamic. This study is just a case study based on my classroom. Types of emotions, situations, ER strategies, and the influence of peer interaction can vary from context to context. The relationship between ER and peer interaction should be further investigated. However, making an effort to notice and respond to fluctuations in learners' emotions can help teachers provide appropriate support for their learners' psychology as well as their English learning. In addition, teachers also need to create a good learning environment in which students can appropriately regulate their emotions through peer interaction. Only in such an environment can students increase their agency and autonomy. In order to provide them with appropriate support and a good learning environment, it is important that teachers seek to understand individual students and their emotions through dialogue.

## **Conclusion**

In this study, I tried to investigate the emotions that the students experience, the specific situations in which they experience those emotions, and the influence of peer interaction on ER in my English class. The students experienced a wide range of negative and positive emotions. In terms of ER, peer interaction as an example of "social sharing," with its function of extrinsic emotion regulation, seemed to bring about mainly some cognitive change. It was observed that there were both intrinsic and extrinsic aspects to learners' emotion regulation, but most importantly, almost all students indicated that interaction with peers was helpful in ER. However, peer interaction does not always work well because it can elicit negative emotions in some students. What difficulties the students have in peer interaction is not clear, and this is perhaps a limitation in this study that can be further explored. It is necessary to investigate how to make peer interaction positive and healthy in order for ER to work well. In addition, the influence of teacher intervention on peer interaction can also be further investigated. In future research, I will use advising as a means to make peer interaction healthier and more comfortable, including teacher intervention, and investigate the influence on ER of peer interaction that incorporates peer advising.

In order to experience positive emotions, one must also know negative emotions. Both negative and positive emotions are necessary for learners. What is important is to

regulate the emotions well. In my opinion, it is my role as a teacher to support students in developing the ability to regulate their emotions well on their own and among their peers, even in the absence of a teacher, and I believe that this will help students develop autonomy.

## Review Process

This article was open peer-reviewed by Paul Collet and Shu Hua Vivien Kao of the Learner Development Journal Review Network. (*Contributors have the option of open or blind peer review.*)

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## Appendix Plutchik's Types of Emotions

### Basic Emotions

喜び (Joy)	恍惚 (Ecstasy)	平穩 (Serenity)	悲しみ (Sadness)
信頼 (Trust)	感嘆 (Admiration)	容認 (Acceptance)	嫌悪 (Disgust)
恐れ (Fear)	恐怖 (Terror)	心配 (Apprehension)	怒り (Anger)
驚き (Surprise)	驚嘆 (Amazement)	動揺 (Distraction)	期待 (Anticipation)
悲しみ (Sadness)	悲痛 (Grief)	憂い (Pensiveness)	嫌悪 (Disgust)
憎悪 (Loathing)	退屈 (Boredom)	信頼 (Trust)	激怒 (Rage)
煩さ (Annoyance)	予期 (Anticipation)	興味 (Interest)	

### Dyad Emotions

楽観 (Optimism)	失望 (Disappointment)	希望 (Hope)	不信 (Unbelief)
不安 (Anxiety)	憤慨 (Outrage)	愛 (Love)	自責 (Remorse)
罪悪感 (Guilt)	羨望 (Envy)	歓喜 (Delight)	悲観 (Pessimism)
服従 (Submission)	軽蔑 (Contempt)	好奇心 (Curiosity)	冷笑 (Cynicism)
感傷 (Sentimentality)	畏敬 (Awe)	恥 (Shame)	優位 (Dominance)
積極性 (Aggressiveness)	絶望 (Despair)	誇り (Pride)	