神戸市外国語大学 学術情報リポジトリ

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メタデータ	言語: English 出版者: 公開日: 2019-10-30 キーワード (Ja): キーワード (En): Anxiety, emotion, baseline, cognition and empathy 作成者: Greisamer, Michael メールアドレス: 所属:
URL	https://kobe-cufs.repo.nii.ac.jp/records/2478

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Kobe City University of Foreign Studies
Working Paper Series

061

A Baseline Test of Anxiety for Japanese English Language Learners

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October 30, 2019

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The role that emotions play in language acquisition has been brought to the forefront recently in the field of second language learning and teaching (Dewaele et al., 2017; Horwitz, 2017; Teimouri et al, n.d.). The effects that anxiety, one such emotion, has on the learner can influence his/her proficiency and level of communicative ability (Oxford, 1999). Japanese learners are notorious for their anxiety in the English classroom.

This study introduces an original baseline test designed by the researcher that measures the level of anxiety in Japanese learners in the L1 (Japanese) and the L2 (English). Traditionally, anxiety has been measured by self-perceived questionnaire (Horwitz et al, 1986) where learners report their feelings on anxiety. The BAT (Baseline Anxiety Test) assess anxiety "on the spot" in real time when interacting with their teacher. This involves analyzing data qualitative in nature and assigning quantitative numeral assignments. The results demonstrate that learners display higher levels of stress when faced with a critical thinking or opinion based situation. Surprisingly, anxiety levels for these questions were actually higher in the L1 than the L2. This may be a result of their existing social and educational environment exacerbated by the anxiety of learning a second language.

Keywords: Anxiety, emotion, baseline, cognition and empathy.

Introduction

This study explores the role that anxiety plays in the EFL classroom by conducting an experiment to determine the baseline level of Japanese EFL learners. More specifically, this research will investigate the roots of language anxiety for Japanese learners of English and to provide further knowledge about FLA (Foreign Language Anxiety) in Japan.

Motivation of the Study

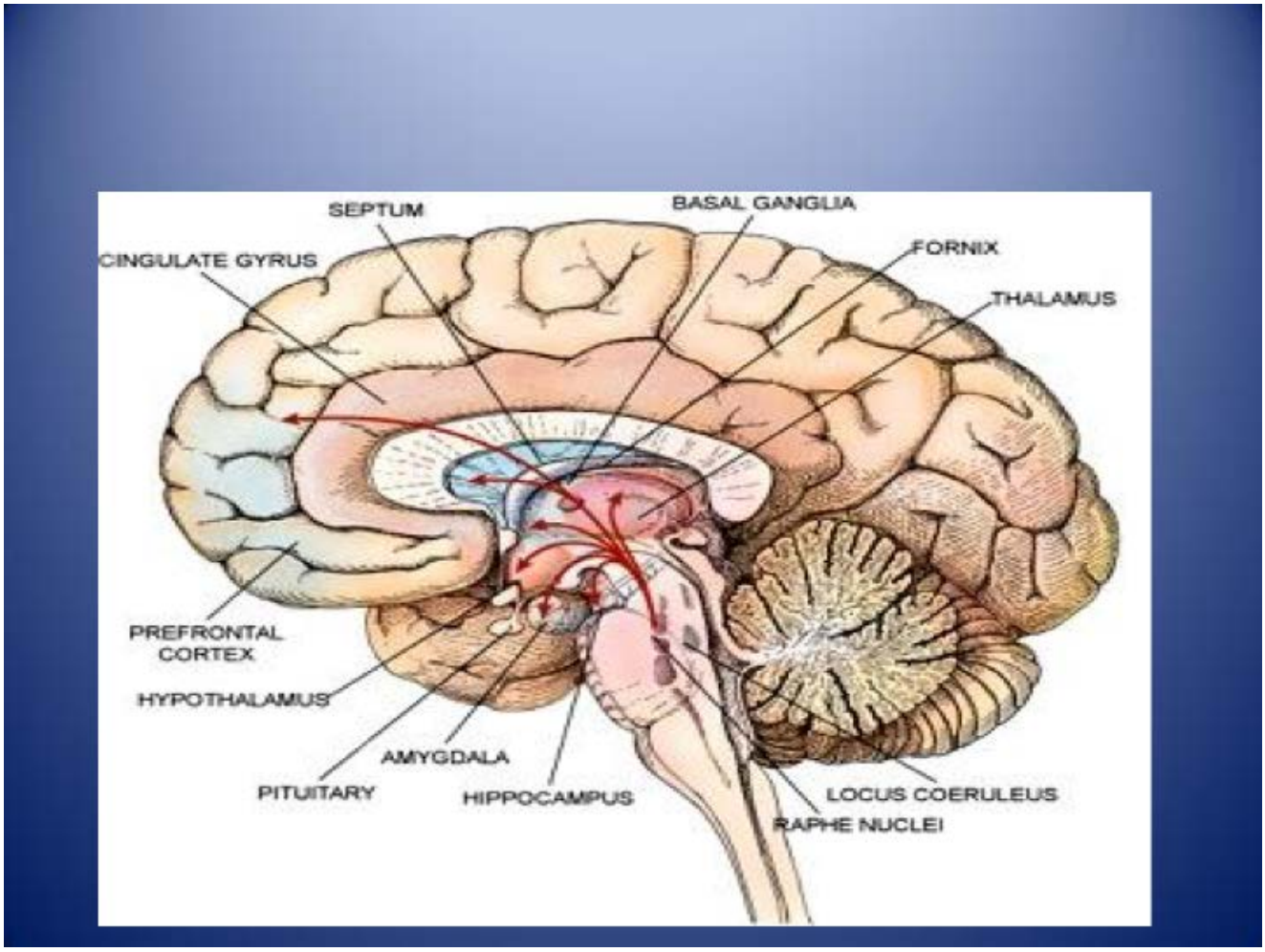
My curiosity in anxiety stems from personal experience as a second language learner and professionally as an educator. The endeavor to acquire Japanese is a constant struggle. Even today after more than 25 years in country many social and linguistic aspects still elude me. I arrived in Japan with no official language training and realized after a short period of time that I could not keep my sanity without some proper language instruction. In Japanese class is where I felt the second language anxiety. I had a lot of trouble with my own self-esteem and felt embarrassed to speak Japanese to others.

My second interest in language anxiety comes from teaching English to Japanese learners. April is the start of the new school year in Japan, and tensions and expectations are high. The anxieties have already begun before the class even begins. After twenty years of teaching, these motions and procedures have become second nature. Language teaching necessitates immediacy and a more personal approach which contrasts with the traditional lecture-based methods of the educational system of Japan.

Literature Review

In order to understand anxiety, it is important to know how it is created and develops. The brain can be split into two parts: the emotional and the cognitive or the amygdala and the prefrontal cortex (PFC) (Gadye, 2018) (see Figure 1). The part of the brain that creates, maintains, or modifies anxiety and fear responses is called the amygdala or the emotional area of the brain located deep inside the brain. In contrast the cortex which has been labeled the thinking part of the brain, controls the cognitive functions. These roles are more dynamic than previously thought with the amygdala contributing to attention and decision making (Fox, 2018). According to Fox, the area around the amygdala can be stronger, overriding the cortex, putting emphasis on emotions more than had been previously thought. As Rachman (2013) explains, the amygdala is stimulated to inform the adrenal glands to release the chemicals (adrenaline and noradrenalin). These chemicals are used as messengers by the sympathetic nervous system to trigger anxiety (Rachman, 2013).

Figure 1 *Parts of the Brain* (Gadye, 2018, p. 4).



Anxiety described by Spielberger (1983) is the subjective feeling of tension, nervousness, trepidation and worry associated with an arousal of the autonomic nervous system. These subjective anxious feelings also carry over into the area of language. For example, linguists regard anxiety as "a state of apprehension, a vague fear" in students' language learning (Scovel, 1978, p. 133). Most notably FLA is perceived as a complex and multi-dimensional phenomenon of self-perceptions, beliefs, feeling and behaviors related to

foreign language learning (Horwitz, Horwitz, & Cope, 1986).

In a study conducted by Bless & Fiedler (2006), empirical evidence shows that emotion has a direct influence on cognition and how people think. When a person is anxious or stressed, the physiological response is in the amygdala, part of the limbic system that is responsible for emotions, which inhibits learning (Zull, 2002). This chemical imbalance has a negative effect on the information processing system as well as information transfer to the PFC (Kennedy, 2006). As Mah (2016) posits, the anxiety stems from the changes that occur in the fear neurocircuitry in the amygdala which responds with an exaggerated response. This overreaction confuses the PFC and hippocampus and disrupts the cognitive process. Exposure to stress similarly alters the fear neurocircuitry by enhancing amygdalar functioning thereby inhibiting PFC/hippocampus control over the stress response (Mah, 2016). This confusion clouds the cognitive process also making it more difficult to store and retrieve information (Nelson & Harwood, 2011). Anxiety can result when a combination of increased internal and external stresses overloads one's normal coping abilities or when one's ability to cope normally is reduced for some reason. This stress, according to MacIntyre (1995), causes divided attention and therefore diminishes levels of cognitive learning that further impair linguistic learning. This suggests that students with higher anxiety levels find it hard to focus their attention on the task at hand because they are distracted and their judgment is impaired, and as a consequence, their performance becomes hindered and they freeze up, one of the key markers of anxiety.

Anxiety in Speaking Context

The bulk of this study is based on communication in the classroom, therefore it is appropriate to examine the background of speaking anxiety and its effects on performance. The concept that communicating in a foreign language class is stressful and causing fear is supported by an abundance of research (Campbell 1991; MacIntyre & Gardner; Horwitz et al., 1986; Liu,

1989; Phillips, 1992; Aida 1994). Aida (1994) posits that speaking in the target language seems the most intimidating aspect of foreign language learning and that the lack of progress in oral communication skills forms the most serious problem for students. Of all the skills taught in the L2 classroom (e.g. reading or listening), students perceive speaking as the most important and exhibit the most anxiety (Kitano 2001). Broidy (2005) argued that students with higher language anxiety are prone to have irrational ideas, are less able to control their impulses, and cope less successfully than other learners.

Anxiety in the Japanese Context

One of the main causes of anxiety in Japanese society is the repressive education system (Yoneyama, 1999); and student's general lack of L2 sociolinguistic ability (Jones, 1999). These societal problems are reflected in the classroom. Students bring this baggage into the classroom, which makes it difficult to break down the barriers of communication. To make matters worse, the society and their educational system reject individual differences and is inflexible. A student permitted to proceed faster must be considered as favorable discrimination. In the classroom this translates into reticence as no one wants to volunteer. No one wants to speak out or stick out as it might be perceived as showing off or boasting. Obedience, silence and passivity are traits that Japan and Japanese teachers deem virtuous in students. This is something that is learned at an early age. Clancy (1990) posits that Japanese infants are guided into patterns of communication which place emphasis on non-verbal comprehension that tends to avoid direct confrontations. A reasonable explanation is that Japan's society discourages the expression of open emotions and any anxieties associated with the emotion, as this is considered to be confrontational as it requires the recipient to provide a response. Traditionally, the method of teaching in Japan is teacher-fronted, and unlike western classrooms, little (if any) contribution is solicited from the learner. The Japanese Ministry of Education, Culture, Sports and Science and Technology (MEXT) is

under pressure to implement more international friendly programs. Evidence suggests that MEXT is always implementing some form of top down reform that never moves down to where it is really required, as status quos remain. The most current reforms come as a response to Japan's fall in ranking on the Program for International Student Assessment (PISA) (Mineshima, 2014). These are not new developments as Japanese have a history of communication problems. Lucas (1984) reported on communication apprehension in the Japanese society and schools and found that "Japan is the culture in which communication apprehension is most common" (Lucas, 1984, p. 594). This can be validated by the way Japanese society functions, in that it discourages the expression of open emotions and anxieties. Despite these problems, "Japan boasts the highest rate of school attendance in the world" with "daily attendance rates of elementary and secondary schools above 95 percent" (Fujita, 200).

Baseline (L1) Test of Anxiety in Japanese English Learners

In order to establish a baseline, the level of anxiety in the L2 is measured against the level of anxiety for the L1 for the same learner at approximately the same level. As noted by Scovel (1991), observation is not easily quantifiable; however, it seems to be a more precise method when focusing on a specific affective construct. The construct of anxiety as a feeling or state of mind can be an intrusive measurement. How do we measure someone sweating or stumbling on their words?

A baseline test is conducted consisting of two parts during different sessions one week apart:

First session: Anxiety level check in the L1 (Japanese)

Second session: Anxiety level check in the L2 (English)

BAT Procedure

The participants for this study are 60 Japanese university second year students in oral communication classes. The participants are from a private university in the Kansai area of Japan from a general English class of non-English majors.

A set of 5 questions is asked of each learner. The questions are graded from simple to difficult, gradually becoming more difficult/personal/obtrusive. In other words, the questions increase the amount of thought and effort being put into comprehension and responding, where the final question requires a degree of critical thinking. It is important to clarify that the task is designed with vocabulary and grammar at their standard ability level. This is to ensure that proficiency, as a variable, does not factor highly into the scores of the test. In addition, in the L2 task students should be familiar with the questions as they are asked the same questions in the L1.

Question one asks their name to confirm that it is the same participant in both tasks. Only question 2 is changed in task 2. Question 2 is changed from "What is your name's Kanji?" to "Where are you from?" For questions 3-5 there are 5 different sets (see Appendix A). Before the task, the research project was explained to the students. While the class is preoccupied with other tasks students are called up individually to participate. The first week they are asked questions in Japanese and asked to reply in Japanese; subsequently, in the following class they are asked the same questions in English. After each session they are asked to complete a short questionnaire about how they felt while answering the questions. The questions for both parts are identical, 3 (6 point) Likert scale and 3 open-ended questions (see Appendix C).

Data is collected in two forms:

1. After task questionnaire
2. Observer report

Observer criteria

For this baseline observation the researcher takes into consideration factors that learners display that are considered related to anxiety as based on the definitions outlined in the literature review. An observation rating sheet was designed to rate the participants (see Appendix B).

The scale rated from 0 - 4. 0 is considered good or not displaying anxiety while 4 is an indication of high anxiety levels. For example, if the participant speaks very fast or very slow this is considered a higher anxiety, generating a 3 or 4 score. If a participant is smiling or laughing with a look of content this would be considered a better (lower) score for facial reaction. Table 1 shows the scale used to score the baseline test.

Table 1 *Baseline Scoring Scale*

	Scoring Scale				
	0	**1**	**2**	**3**	**4**
Timing	Displayed normal pauses and speed	Brief unnatural pauses	Minor problems Dysfluent-response, too fast	Displays of unnatural pauses and speed. (too fast or too slow)	Major problems of all mentioned
Quality of Answer	Spoke with confidence comprehensibility and demeanor	Brief loss of concentration	Minor confusion, over use of fillers	Lack of confidence and incomprehensible language	Major problems of all mentioned
Vocal tone	Normal vocal tone. clear intonation and pitch	Brief waver of volume intonation	Minor problems in strength of vocal tone.	Problems with volume either too loud or too weak.	Major problems with all mentioned
Body Reaction	Displayed calm demeanor, with no unnatural body movements	Brief display of tenseness or poor posture	Minor problems with fidgeting or body movement	Problems with fidgeting, unnatural body movements.	Major problems with all mentioned

Facial Reaction	Did not display any stress or anxiety.	Slight signs of stress	Minor signs-rapid eye movement, frowning	Uncomfortable tenseness is apparent in facial expression	Major problems with all mentioned

The criteria have been based on previous research and definitions mentioned and the experience of the researcher. A cautionary note that must be considered is that the behaviors expressed are not exclusively related to anxiety and that issues of pausing, speaking too fast or intonation are tribulations that many language learners encounter and may not necessarily be an indication of anxiety. It is expected that the baseline test will provide a correction to this as an input. The criteria also take into consideration the specific cultural and social aspects of the Japanese in rating and judging the participants.

Results

In broadly defining measurement, it is the assignment of numerals to objects or events according to consigned rules. The problem then becomes that of making the rules explicit which includes rule assignment of numerals. As Plonsky posits: "Most phenomena addressed by instructed second language acquisition (ISLA) research explicit instruction, task complexity, linguistic knowledge, for example are qualitative in nature; that is, most of the constructs we study are not inherently numeric" (Plonsky, 2018, p. 505). For example, to measure anxiety the BAT has designed a criterion that defines anxiety in second language learners which can be converted into numerical values. The advantage of quantitative data is that it can be easily analyzed with mathematical procedures which enable the researcher to logically apply the calculated formulas to compare and divide the data.

Quantitative BAT Results

The BAT is scored from 0 to 4 with 5 questions for a maximum score of 20. A score of 0 represents no anxiety and 20 the highest anxiety level. Table 2 shows the descriptive statistics for the BAT. The mean score for the L1 is 2.55 and the L2 test mean score is 6.15 demonstrating a much higher level of stress in the latter.

Table 2 *Anxiety Levels*

Descriptive Statistics

	L1 Task Score	**L2 Task Score**
N	60	60
Mean	2.55	6.15
Std. Deviation	1.52	2.60
Minimum	0.00	1.00
Maximum	5.00	12.00

In order to compare the two tests a paired t-test was run. There is a significant difference between the tests with a p value of < .001 and an effect size of -1.20 (Cohen's d). (see Table 3)

Table 3 *Paired Samples T-Test*

		t	**df**	**p**	**Cohen's d**
L1 Task Score	- L2 Task Score	-9.30	59	< .001	-1.20

Note. Student's t-test.

Table 4 shows the comparison of the L1 test (task one) vs. the L2 test (task 2). As expected the anxiety increases with the difficulty of the question. As highlighted the total score is much higher in the L2 task demonstrating higher levels of stress. Perhaps the most

interesting finding is Q5 (the most challenging question) which exhibits the highest percentage of anxiety. This clearly demonstrates that students experience greater anxiety in their own language when faced with a critical thinking or opinion based question as displayed in Table 4.

Table 4 *BAT Anxiety levels of Japanese learners.*

	L1 Task 1 (Japanese)		L2 Task 2 (English)	
	score	%	score	%
Q1	0	0%	16	5%
Q2	7	5%	35	10%
Q3	18	12%	74	20%
Q4	41	27%	96	26%
Q5	87	57%	148	40%
Total	153		369	

N = 60

Qualitative BAT results

After Task 1 participants are asked to complete a questionnaire expressing how they felt during the task (see appendix C). The first part of the questionnaire included closed-ended questions. In correlation with low anxiety levels more than half agreed completely that they felt totally relaxed, the questions were easy, and that they could answer the questions completely. In the open-ended questions they were asked what gave them the most stress and least stress. Many replied that question number 5 made them anxious. Related to this is that 7 participants said that they were worried if the teacher could understand their Japanese and 5 said they were worried if their answer was correct. These are connected as question number 5 specifically asked for their opinion on a political or economic topic. The objective of the questions is to assert their ability to think and express an answer beyond mere repetition. In

the Japanese education system students are generally not asked their opinion but they are expected to agree with the teacher. If the students' ideas are different from the teachers it is often not acceptable or will receive a negative evaluation. This unknown factor contributes to Japanese learners' anxiety. This uncertainty of not knowing if the teacher can understand their answer, and if their answer is in conjunction with what the teacher wants to hear clouds the cognitive process as discussed in the literature review section. A simple example of this is from the social behavior of the Japanese at the FIFA world cup in Russia in 2018. The Japanese became famous for their cleaning of the stands and the locker-room after their match ended. This is because they did not want to be looked upon in a bad way or leave a bad impression of Japan on the world stage and overcompensated to an extreme by going outside the norm.

When asked what gave them the least anxiety many commented on teacher reactions:

> *"When teacher (sic) smiled I felt relaxed; when teacher (sic) gave eye-contact I felt good; when teacher nodded his head I felt relieved; teacher was (sic) kind so I did not feel stress."*

This supports the premise that the teacher plays a major role in the level of anxiety in the classroom and should be aware of the subtle messages given to learners.

Another interesting anomaly observed was that despite the researcher explaining in the L1 (Japanese) that this part of the test must be completed in Japanese, some answered in English. This might have been acceptable if they could answer correctly. However most struggled to reply in English and had to be reminded that Japanese is acceptable. This is an example of the Japanese stereotype of foreigners not being able to speak Japanese. When they see the face of a non-Japanese it is indoctrinated from education and society that Japanese cannot be learnt or understood by foreigners and that English must be used to communicate.

Task 2 of the BAT was conducted a week after Task 1 with the same students and generally the same questions. Question number 2 was changed from a Kanji question about their name to: Where are you from? This question was changed to avoid using any Japanese in Task 2. 48% of the participants felt relaxed during the task which is 20% less than Task 1. Additionally, 10% felt the questions were easy and 3% said they could answer completely. This aligns with the quantitative data of a high level of anxiety in the L2 task. From the open-ended questions the highest anxiety level expressed was not being able to answer the questions in English. Through qualitative observation of the participants this became apparent in their demeanor and physical characteristics. These included: hands to face, looking away, squinting of eyes, scratching head, stiffening of lips, rocking on hands under the chair, mumbling, laughing or repeating the question. As confirmed by Woodrow (2006) these are physical symptoms a language leaner experiences which denotes LA and impairs the learner's cognitive abilities. Some students may recognize that the questions were the same as Task 1 and would relax, until they could no longer answer in English and then become more anxious.

Discussion

To the researcher's knowledge, it is the first time that subjective observation scores have been calculated quantitatively. It has been the norm for students or patients to give their thoughts on how they are feeling by means of self-report methods.

A study that is similar in nature is a study by Gregersen (2009). In her study she examines whether nonverbal visual and/or auditory channels are more effective in detecting FLA. English language teachers were asked to view videotaped oral presentations of learners proving qualitative data about their behaviors. She points to the fact that using nonverbal behavior to make judgments about an interlocutor's emotion is a complex and contradictory

process. For instance, take smiling; one examiner made the comment of "fake smile" and "smiled too much" while the same student was rated as "smiled a lot" as justification of non-anxious. Therefore, decoding accuracy did not necessarily depend on whether the students smiled or not but on making an authentic judgment. (Gregersen, 2009) The observers noted higher anxiety students fidgeting with hands or paper, rocking back and forth, shifting from foot to foot, limited eye contact, excessive pausing, monotonous voice and too much repetition. Among the visual avenues for communicating emotion or in the particular case of her study, anxiety, in which the avenues are bodily cues including gesture, posture, and facial expression. This also supports the well-known axiom of 80% of communication is non-verbal. The actual number is 93% which is from Albert Mehrabian's (1972) research on non-verbal communications.

Conclusion and Pedagogical Implications

As the results have shown as predicted learners have more anxiety in the L2 than the L1. However, when faced with a critical thinking or opinion based questions the participants displayed slightly higher levels in their L1 (Japanese) which surmises that Japanese FLA has deeper roots than the classroom. Sparks, Ganschow and Javorsky (2000) ask if anxiety is a cause or effect of poor proficiency in language learning and suggests that L1 learning deficit as the prime cause of poor proficiency. Similarly, in this study, they claim that the problem most likely lies in the L1 learning and that facility with one's language codes (comprehension, syntax, semantics) is likely to play a major part in FLA. To imagine FLA as a result of poor language learning is quite ordinary. A learner is weak at language learning and accordingly feels stressed about English class. The question is how to combat this problem and to determine the extent to which anxiety is the cause rather than the effect of poor language learning.

In addition to the social and educational factors mentioned in this study, some other factors include lack of effort; poor learning habits and low ability are other reasons for anxiety. The role of the teacher is also influential in student participation and motivation. A good teacher will show empathy and detect the cause of FLA, creating a comfortable classroom environment to participate in, rather than fear the language (Chaokongjakra, 2013).

In order to help Japanese learners relax, they have to be released from cultural and institutional restraints. As Williams (1994) explains, teachers must move away from the ritual domain commonly found in conventional classrooms and aim for a more intimate domain. In other words, the teacher should make the class more personal and humanistic that relates to their own needs and lives. The techniques and approaches employed by the teacher will influence how learners participate and engage. Hashemi and Abbasi (2013) suggest some effective ideas for teachers to alleviate their learners' anxiety in the classroom. These include adapting the communicative approach and creating a student-friendly and learning-supportive environment in the classroom.

The current pedagogical trend is the reinforcement of positive psychology with the goal of building character and autonomous learners (Dewaele & MacIntyre, 2014; Oxford, 2015). One of the best ways to cope with the issue of anxiety is by bringing a positive attitude to the classroom and actually not addressing it. In other words, focusing on the positive and enjoyment of the class will fuel learners' enthusiasm. It is often the case that the language teacher has to play the role of the entertainer to capture and hold the attention of our audience which is part of the fun and fire which is essential to build interpersonal relationships with our learners. This friendly style can help build rapport and help learners feel more comfortable in the L2 classroom.

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Appendix A

Questions for Baseline Test

First and second question set for L1 task (Japanese)
1. What's your name? (お名前を教えて下さい。)
2. What is the Kanji for your name? (名前の漢字を教えて下さい。)
First and second question set for L2 task (English)
a. What's your name? (お名前を教えて下さい。)
b. Where are you from? (どちらのご出身ですか。)

Third question set
a. What sports do you like? (何のスポーツが好きですか。)
b. What did you have for dinner last night? (昨夜の夕食は何を食べましたか。)
c. What kind of music do you like? (好きな音楽のジャンルは何ですか。)
d. Tell me about your pet. (ペットについて何か教えて下さい。)
e. What country do you want to visit? (どこの国に行きたいですか。)

Fourth question set
a. Where is the best place to visit in Japan? (お勧めの日本の観光地を教えて下さい。)
b. Where do you want to go for a holiday? (休暇はどこに行きたいですか。)
c. Where do you like to go shopping? (どこに買い物に行きたいですか。)
d. Tell me a good restaurant or café. (お勧めのレストランかカフェを教えて下さい。)
e. What are your plans after graduation? (卒業後のご予定は何ですか。)

Fifth question set
a. How do you feel about Prime Minister Abe? (安倍総理大臣について、あなたの意見を聞かせて下さい。)
b. How do you feel about President Trump? (トランプ大統領について、あなたの意見を聞かせて下さい。)
c. Should the US military stay in Okinawa? (アメリカ軍は沖縄に駐在するべきだと思いますか。)
d. What do you think about the tax increase to 10%? (消費税が 10%になることについて、どう思いますか。)
e. If a homeless person asks you for money, what do you do? (道で貧しい人にお金をせがまれたら、どうしますか。)

Appendix B

BAT Observer Rating Sheet

Student ID			Comment
	L1 Task 1 Japanese	L2 Task 2 English	
Q1			
Q2			
Q3			
Q4			
Q5			
Total			

Appendix C

BAT After Task Questionnaire

After task Questionnaire Please answer in English or Japanese.						
Part 1	100% Totally Agree	80% Agree	60% Slightly Agree	40% Slightly Disagree	20% Disagree	0% Totally Disagree
During the task I felt totally relaxed. (質問中、完全にリラックスできた。)						
The questions were very easy. (質問はとても簡単であった。)						
I felt I could answer all questions completely. (全部の質問に完璧に答えられた。)						
1. During the session what gave you the most anxiety? Or when did you feel the most anxious? (質問中、一番不安に感じたことは何ですか。または、どんな時に不安を感じましたか。)						
2. During the session what gave you the least anxiety? Or when did you feel the least anxious? (質問中、どんな時に落ち着いて対応できましたか。または、不安を感じずに対応できた理由を教えて下さい。)						
3. Please comment on how you felt. (質問中に感じたことを書いて下さい。)						