

A Pilot Study on the Relationship between Learning Climate in English Classroom and Students' Motivation toward the Classroom Activities

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Abstract

This pilot study aims to examine the theoretical relationship between learning climate in English classroom and the participating students' motivation toward the classroom activities within the contexts of Cross-Cultural Distance Learning (CCDL) English classes. In order to attain this aim, we set two purposes: (1) to examine the construct validity of the questionnaires called the Learning Climate Questionnaire (LCQ: Black & Deci, 2000) and the Perceived Competence Scales (PCS), both of which were designed to provide indices of classroom-related learning climate; and (2) to investigate the correlation patterns between these indices and the measure of motivational styles so as to further validate the LCQ and the PCS. Through the above validation process, we sought to delineate the relationship between the classroom climate and the students' motivation. On evaluating students' motivational styles, we adopted theoretical framework of Self-Determination Theory (Deci & Ryan, 1985), and discussed the issues in terms of three types of motivation: intrinsic motivation, extrinsic motivation and amotivation. The findings suggested the applicability as well as the construct validity of the LCQ and the PCS within the contexts of CCDL. The findings also provided empirical foundation for exploring the causal relationship between classroom environment and the students' motivational enhancement in the future study.

Keywords

Classroom Climate, L2 Motivation, Perceived Autonomy, Perceived Competence, CMC Activities, Distance Learning Program

1 Introduction

This pilot study is a part of our longitudinal surveys investigating students' motivation for learning English in a series of distance English learning activities called Cross-Cultural Distance Learning (CCDL) Computer-Mediated Communication

(CMC) activities. Indeed, we have conducted several empirical surveys on the above motivational issue since 2008 (e.g., Nakano & Yoshida, 2008; Yoshida & Nakano, 2010). The series of surveys have been intended to evaluate the effectiveness of CCDL program in terms of the participating students' motivation toward the CMC activities, a sort of classroom activities subsumed in all the types of English classes relevant to CCDL (henceforth: CCDL English classes). The fact that all the types of CCDL English classes have employed at least one CMC activity has enabled us to compare the motivational differences among the participating students, and in turn, the results of motivational comparison have led us to evaluate the effectiveness of the CMC activities as well as the program itself.

The primary purpose of our previous experiments was to examine whether the difference of class types, *elective* vs. *compulsory*, would cause motivational differences among the participating students, drawing on the following assumption as the research hypotheses: a student's motivation will be less if the class is compulsory while it will be more desirable if one chooses to join the class based on his/her decision, i.e., to participate in elective classes (Nakano, 2006). In order to attain this purpose, we adopted theoretical framework of Self-Determination Theory (SDT: Deci & Ryan, 1985) and discussed the motivational issues in terms of three types of motivation: intrinsic motivation, extrinsic motivation and amotivation. As a result, we found that the students in elective types of CCDL classes are likely to be autonomously motivated to join the CMC activities, whereas those who in obligatory types of CCDL classes are said to be externally forced to join the activities. Thus, these findings were found to be almost congruent with our research hypotheses (cf. Nakano, 2006).

In the previous experiments, moreover, we encountered another potential factor to cause

motivational differences among the students. Indeed, the findings implied that difference in teaching approach, which can be well exemplified by a contrast between *student-centered approach* and *teacher-oriented approach*, could be a predictor of the students' motivational differences; such that the student-centered approach would cause motivational enhancement, while teacher-oriented approach would tend to undermine the students' motivation within the contexts of CCDL. In other words, it was suggested that *autonomy supportive classroom climate*¹ would be closely related to the students' motivational enhancement, whereas *controlling climate* would exercise some undermining effects on the motivation. Although our previous experiments could not further examine the effect(s) of the learning climate due to the lack of instruments, we believed that this speculation would be reasonable because the situation appeared to conform with the theoretical framework of SDT, where it is hypothesized that one's motivation will be enhanced if the environment satisfies his/her innate need for being autonomy. Therefore, we believe that it is necessary and worthwhile to investigate this issue in detail.

In this study, therefore, we examined the theoretical relationship between leaning climate in English classroom and the participating students' motivation toward the classroom activities (i.e., CCDL CMC activities) from the perspectives of SDT. In order to evaluate the classroom-related leaning climate, we employed two kinds of questionnaire called the Learning Climate Questionnaire (LCQ: Black & Deci, 2000) and the Perceive Competence Scales (PCS), respectively, and then, regarded the indices representing to what extent the students could feel the sense of autonomy as well as of competence (viz. effectance) in the class, as the reflection of learning climate in the given classroom. As for the assessment of the students' motivational styles, we adopted a questionnaire that we developed in our previous experiments (e.g., Yoshida & Nakano, 2010).

On the basis of the above methodology, we set two purposes: (1) to examine the construct validity of the LCQ and the PCS in terms of the internal structure as well as the internal consistency; and (2) to investigate the correlation patterns among the indices of perceived autonomy, those of perceived competence and the measure of motivational styles so as to further validate the LCQ and the PCS. In short, these analyses were intended to be validation of the two questionnaires. Thus, through the

validation process of the LCQ and the PCS, we sought to examine the relationship between classroom-related learning climate and the students' motivational styles toward the classroom activities.

2 Background of this study

2.1 Cross-Cultural Distance Learning (CCDL)

CCDL is a distance learning program which has been run by Waseda University and the partner universities around Asia since 1999 (Nakano, Yoshida & Owada, 2008). The main aim of this program is to provide the participating students with sufficient opportunities to use in authentic communicative context. In order to embody this educational aim, the program and the relevant English classes (i.e., CCDL English classes) have employed various kinds of ICT device such as video-conferencing system, CMC chat system and online learning management system (LMS). Thus, CCDL CMC activities refer to those classroom activities which are supported by the above ICT device, especially by CMC chat system and video-conferencing system.

Another important feature of CCDL is that it provides two types of English classes: that is, (1) elective type of CCDL classes and (2) compulsory type of CCDL classes. As Nakano (2006) pointed out, we found that the difference of the class types could be a predictor of motivational differences.

2.2 Self-Determination Theory

Self-Determination Theory (SDT: for recent review, see Ryan & Deci, 2000b, 2002) is a comprehensive theory on human motivation proposed by Deci and Ryan (1985). SDT discusses the motivational issues in terms of three types of motivation: intrinsic motivation, extrinsic motivation and amotivation. In short, these three types of motivation are categorized on the basis of the degree of self-determination, which is defined as the reflection of 'one's choice' with respect to the given behavior, and the notion of intentionality. The following sections summarize the brief definition of the concepts.

2.2.1 Intrinsic Motivation

SDT describes intrinsic motivation as "prototypical form of self-determination" (Deci & Ryan, 1991, p.253), which represents a fully autonomous type of motivation. That is, if one is intrinsically motivated to do a certain activity, he/she spontaneously engages in it "with a full sense of choice, with the experience of doing what one wants, and without the feeling of coercion or compulsion" (Deci and Ryan, 1991, p.253). Thus,

¹ As Black and Deci (2000) mentioned, the adjective, 'autonomy supportive' can be interchangeably used with 'student-centered' within the realm of education.

intrinsically motivated behaviors are considered to be fully endorsed by one's own self. It is also important to note that previous research often categorized intrinsic motivation into three types: intrinsic motivation for knowledge, for accomplishment and stimulation (for details, see Noels et al., 2000; Vallerand et al., 1992, 1993).

2.2.2 Extrinsic Motivation

According to SDT, extrinsic motivation can be divided into four types based on the quality or amount of internalization²: they are *external regulation*, *introjected regulation*, *identified regulation* and *integrated regulation*. In other words, these types of extrinsic motivation are categorized on the basis of the extent to which they are self-determined (Deci & Ryan, 2000). Figure 1 shows self-determination continuum posited by SDT, which represents the relationship among the types of extrinsic motivation.

Behavior	Non self-determined				Self-determined	
Type of Motivation	Extrinsic Motivation				Intrinsic Motivation	
Type of Regulation	Non-Regulation	External Regulation	Introjected Regulation	Identified Regulation	Integrated Regulation	Intrinsic Regulation
Locus of Causality	impersonal	External	Somewhat External	Somewhat Internal	Internal	Internal

Figure 1: Self-Determination Continuum (as cited in Deci & Ryan, 2000, p.237)

As Figure 1 indicates, *External regulation* refers to a type of extrinsic motivation that is accompanied by the least level of self-determination. The externally regulated behavior is, therefore, motivated to obtain the externally posed reward or to avoid the punishment (Ryan & Deci, 2002).

Introjected regulation represents the partially internalized type of extrinsic motivation. SDT describes the feature as one internalizes the regulation for externally valued activities within the self, but does not perceive it as his or her own (Deci et al. 1991, 1994).

Identified regulation refers to self-determined form of extrinsic motivation. At this stage, one identifies the value and importance of the target activity and accepts the regulation as his or her own. Therefore the person is willing to engage in the activity with less pressure and conflict (Deci & Ryan, 1991; Deci et al. 1991).

Integrated regulation represents “the most developmentally advanced form of extrinsic

motivation” (Deci et al. 1991, p.330). In other words, it refers to the most self-determined type of extrinsic motivation. However, because behaviors based on integration still involve some instrumentality, there is a conceptual boundary between integrated regulation and intrinsic motivation (Deci & Ryan, 1985, 1991; Ryan & Deci 2002a).

2.2.3 Amotivation

According to SDT, amotivation is not associated with one's intentionality with respect to a given activity. Therefore, the resulting behavior is characterized as non-self-determined. Hence, amotivation represents the lack of self-determination as well as motivation (Deci & Ryan, 2000).

2.2.4 The relationship between environmental factors and motivation discussed in SDT

SDT assumes that, if environment fulfills one's needs for autonomy and competence, they work as nutrients to enhance his/her motivation for the given activities, and result in highly motivated behavior; on the other hand, if environmental factors thwart the needs, motivation is presumed to be diminished and, in turn, one's behavior becomes less motivated. Thus, SDT delineates environmental factors surrounding the target activity in terms of the concept of autonomy and competence, and then, categorizes the contexts into *autonomy-supportive* vs. *controlling*. This fact could be a rationale for measuring the classroom-related learning climate by degree of the students' perceived autonomy as well as competence. Stated differently, we can regard the students' perceived level of autonomy as well as the competence in the classroom as *motivational antecedents* (Noels et al., 2000), which are expected to be closely related to their motivational styles toward the classroom activities.

3 Method

3.1 Participants

The participants in this study were 51 university students enrolled in CCDL English classes. All the students participated in elective types of CCDL classes.

3.2 Instruments

The questionnaire used in this study consisted of three parts as follows:

- (Part 1) Motivation Questionnaire,
- (Part 2) Autonomy Questionnaire (LCQ), and
- (Part 3) Competence Questionnaire (PCS).

² Internalization refers to intrinsically motivated process where people actively transform their externally forced regulation into self-regulation that is endorsed by the self (Deci et al. 1991; Rigby, Deci, Patrick & Ryan, 1992; Deci, Ryan & Williams, 1996; Ryan & Deci, 2002)

3.2.1 Part1: Motivation Questionnaire

The first part of questionnaire contained 24 items that were developed on the basis of 21 items in the Language Learning Orientations Scale (Noels et al., 2000) and of 3 items in Park (2006). These items were designed to assess 7 types of motivation proposed in SDT: Intrinsic Motivation for Knowledge (IMK: 3 items), Intrinsic Motivation for Accomplishment (IMA: 3 items), Intrinsic Motivation for Stimulation (IMS: 3 items), Extrinsic Motivation-Identified Regulation (EMID: 4 items), Extrinsic Motivation-Introjected Regulation (EMINTRO: 4 items), Extrinsic Motivation-External Regulation (EMEX: 4 items), and Amotivation (AMOT: 3 items). Along with our previous experiments (e.g., Yoshida & Nakano, 2010), we employed 7-point Likert scale originally adopted in Academic Motivation Scale (Vallerand et al. 1992, 1993).

3.2.2 Part 2: Autonomy Questionnaire (LQS)

The second part was composed of 15 items from the LCQ (see, Appendix A). These items were designed to assess to what extent one could perceive the sense of autonomy in the class, according to 7-point Likert scale. That is, the participants were asked if their classroom instructor can be said to be *autonomy supportive* or *controlling* in the classroom. As mentioned above, we regarded the resulting indices as the reflection of the classroom climate. It is important to note that we slightly modified the items so as to fit the target contexts.

3.2.3 Part 3: Competence Questionnaire (PCS)

The third part consisted of 6 items related to the PCS, which were designed to evaluate to what extent one could feel sense of competence as well as of effectance in the classroom (see, Appendix B). We slightly modified the items in the original version of the PCS. It is also important to note that 2 out of the 6 items were developed by the

authors based on the original 4 items.

3.3 Analyses and Research Hypothesis

3.3.1 Analyses on Motivation Questionnaire

We computed the inter-correlations among 7 subscales subsumed in Motivation Questionnaire (see, 3.2.1). As in Vallerand and Bissonnette (1992), these analyses were intended to examine the construct validity of the scale, instead of running the factor analyses. Research hypothesis concerning these analyses was that the resulting pattern of inter-correlation would be simplex pattern.

3.3.2 Analyses on the LCQ and the PCS

First, we run exploratory factor analyses on the items in LCQ and those in the PCS so as to examine the internal structure of each construct. All the analytic procedures were the same as our previous experiments (e.g., Yoshida & Nakano, 2010). We also computed Cronbach's alpha coefficients for screening the internal consistency. Research hypothesis subsumed in these analyses was that both the constructs would be found to consist of single-factor, as reported in the previous studies (e.g., Black & Deci, 2000).

Second, we performed the correlation analyses among the LCQ, the PCS and Motivation Questionnaire. We hypothesized that both the indices of perceived autonomy and competence would be highly correlated with the types of autonomous motivation (three kinds of IM and EMID) whereas they would show negative or zero correlation with controlled types of motivation (AMOT, EMEX, and EMINTRO), as discussed in SDT (see, 2.2.4)

4 Results and Discussion

4.1 Analyses on Motivation Questionnaire

Table 1 summarizes the inter-correlations among 7 types of motivation in Motivation Questionnaire.

Table 1: Correlations among 7 subscales (N=51)

	Motivation subtypes						
	AMOT	Extrinsic Motivation			Intrinsic Motivation		
		EMEX	EMINTRO	EMID	IMA	IMK	IMS
AMOT	(0.82)	.559**	.383**	-.051	-.023	-.158	-.087
EMEX		(0.63)	.675**	.063	.119	.030	.024
EMINTRO			(0.68)	.312*	.411**	.083	.410**
EMID				(0.83)	.684**	.546**	.642**
IMA					(0.83)	.557**	.742**
IMK						(0.80)	.448**
IMS							(0.86)

Note: * $p < .05$, ** $p < .01$, respectively. The parenthesized values indicate Cronbach's alpha coefficient. AMOT, EMEX, EMINTRO, EMID, IMA, IMK, and IMS refer to Amotivation, Extrinsic Motivation External Regulation, Extrinsic Motivation, Introjected Regulation, Extrinsic Motivation, Identified Regulation, Intrinsic Motivation for Accomplishment, Intrinsic Motivation for Knowledge and Intrinsic motivation for Stimulation, respectively.

As Table 1 shows, we can see the obvious correlation patterns among 7 types of motivation. First, controlled types of motivation (i.e., AMOT, EMEX, and EMINTRO) are found to be highly correlated each other, whereas their correlations with self-determined types of motivation (i.e., EMID, IMA, IMK, and IMS) are said to be almost zero or show negative direction, except for EMINTRO, which is located in the middle of continuum, and thus, expected to be positively correlated with both sides. On the other hand, self-determined types of motivation (i.e., EMID, IMA, IMK, and IMS) are highly correlated each other, whereas their correlations with EMEX and AMOT are found to be almost zero or show negative direction.

To sum up, the resulting patterns of inter-correlations are said to delineate the conceptual relationships among the types of motivation as summarized in Figure 1. However, because there are some correlation coefficients that could not yield statistical significance due to the small number of the participants, we should refer to the relationship not as 'simplex pattern' but as 'quasi-simplex pattern' among the 7 types of motivation. It is also important to note that the correlation patterns observed in the analyses are shown to be almost similar to the results observed in previous studies (e.g., Noels et al., 2000; Vallerand & Bissonnette, 1992). Thus, the result would provide a piece of evidence with respect to the construct validity of Motivation Questionnaire used in this study.

4.2 Analyses on Autonomy Questionnaire (LCQ)

4.2.1 Descriptive statistics for 15 items

Table 2 shows the descriptive statistics for 15 items in the LCQ. Among the 15 items, all the responses on Autonomy 13 were converted using the equation, 8-(each response), because this item was designed as 'reversed item'.

Table 2: Descriptive statistics for 15 items (N=51)

($\alpha = 0.955$)	M	SD	Item-Total Correlation
Autonomy1	5.25	1.495	.509
Autonomy2	5.16	1.377	.797

Table 3: Correlations between perceived autonomy and 7 types of motivation

	AMOT	EMEX	EMINTRO	EMID	IMA	IMK	IMS
Perceived Autonomy	-.103	-.150	.017	.130	.319*	.145	.322*

Note: * $p < .05$. AMOT, EMEX, EMINTRO, EMID, IMA, IMK, and IMS refer to Amotivation, Extrinsic Motivation External Regulation, Extrinsic Motivation, Introjected Regulation, Extrinsic Motivation, Identified Regulation, Intrinsic Motivation for Accomplishment, Intrinsic Motivation for Knowledge and Intrinsic motivation for Stimulation, respectively.

($\alpha = 0.955$)	M	SD	Item-Total Correlation
Autonomy3	5.20	1.510	.802
Autonomy4	5.12	1.532	.816
Autonomy5	5.27	1.588	.868
Autonomy6	5.08	1.521	.796
Autonomy7	5.45	1.487	.746
Autonomy8	5.47	1.617	.736
Autonomy9	5.45	1.487	.847
Autonomy10	5.14	1.470	.895
Autonomy11	5.12	1.243	.797
Autonomy12	5.27	1.524	.836
Autonomy13	5.78	1.712	.254
Autonomy14	4.98	1.407	.804
Autonomy15	5.20	1.429	.834

As Table 2 indicates, Autonomy 13 has I-T correlation of .254, which is shown to be distinctly lower than the others. Therefore, we decided to exclude the item at this stage. This item reduction led the slight improvement of Cronbach's alpha, from .955 to .963. Thus, as it has been reported in the previous surveys (e.g., Black & Deci, 2000), the internal consistency of the LCQ is found to be stable.

4.2.2 Factor analysis on the 14 items

In order to examine the internal structure of the autonomy, we performed principal factor analysis followed by promax rotation on the remaining 14 items. The result indicates single-factor solution as reported in Black and Deci (2000). The result also indicates that all the items have enough values in KMO statistics for individual items, ranging from .885 to .943. These results suggest the applicability of the LCQ in the contexts of CCDL English classes.

4.2.3 Correlations between perceived autonomy and 7 types of motivation

Table 3 summarizes the results of correlation analyses between the students' perceived autonomy measured by the 14 items in the LCQ and 7 types of motivation subsumed in Motivation Questionnaire. It is important to note that we already excluded Autonomy 13 from the analyses.

As Table 3 indicates, the concept of perceived autonomy is significantly correlated with IMA and IMS, both of which are said to be “prototypical form of self-determination” (Deci & Ryan, 1991, p.253), while the correlations with controlled types of motivation (i.e., AMOT, EMEX, and EMINTRO) are found to be almost zero or show negative direction. These conceptual relationships seem to be almost similar to those observed in a previous study investigating the same topic (Noels et al., 2000), except that we fail to yield statistically significant correlations between the perceived autonomy and three types of motivation: AMOT, EMID and IMK. This difference would be caused by a fact that the number of participants was relatively small. Considering the direction of each correlation coefficient, however, the conceptual relationship seems to be reasonable, and almost congruent with the one hypothesized in SDT.

4.3 Competence Questionnaire (PCS)

4.3.1 Descriptive statistics for 6 items

Table 4 shows the descriptive statistics for the 6 items.

Table 4: Descriptive statistics for the 6 items

($\alpha = 0.929$)	M	SD	Item-Total Correlation
Competence1	4.69	1.568	.742
Competence2	4.84	1.502	.813

Table 5: Correlations between perceived competence and 7 types of motivation

	AMOT	EMEX	EMINTRO	EMID	IMA	IMK	IMS
Perceived Competence	-.111	.005	.134	.258	.510**	.194	.350*

Note: * $p < .05$, ** $p < .01$. AMOT, EMEX, EMINTRO, EMID, IMA, IMK, and IMS refer to Amotivation, Extrinsic Motivation External Regulation, Extrinsic Motivation, Introjected Regulation, Extrinsic Motivation, Identified Regulation, Intrinsic Motivation for Accomplishment, Intrinsic Motivation for Knowledge and Intrinsic motivation for Stimulation, respectively.

As in Table 5, the correlation pattern between the perceived competence and motivational styles appears to be almost same as that of perceived autonomy; that is, the concept is significantly correlated with IMA and IMS, whereas the correlations with controlled types of motivation (i.e., AMOT, EMEX, and EMINTRO) are found to be almost zero, or show negative direction. This correlation pattern is shown to be almost congruent with the results in Noels et al. (2000), except that the correlations between the perceived competence and two types of motivation, AMOT and EMID fail to yield statistical significance³. As mentioned in

³ Although we failed to yield statistically significant result, there existed statistically significant tendency between the perceived competence and EMID ($p=.067$).

($\alpha = 0.929$)	M	SD	Item-Total Correlation
Competence3	4.69	1.543	.818
Competence4	4.86	1.575	.853
Competence5	4.75	1.598	.799
Competence6	4.82	1.452	.739

As shown in Table 4, all the items have enough degree of Item-Total correlation. Moreover, Cronbach’s alpha coefficient for the 6 items indicates the high degree of internal consistency.

4.3.2 Factor analysis on the 6 items

Along with the procedures mentioned in 4.2.2, we run factor analysis on the 6 items in the PCS so as to examine the internal structure of perceived competence. As a result, we yield single-factor solution. The result also indicates that all the 6 items have enough values in KMO statistics for individual items, ranging from .816 to .938.

4.3.3 Correlations between perceived competence and 7 types of motivation

Table 5 summarizes the results of correlation analyses between the students’ perceived competence measured by the 6 items in the PCS and 7 types of motivation subsumed in Motivation Questionnaire.

4.2.3., this difference might be caused by the small number of the participants in this study. Considering the direction of correlation coefficients, however, the pattern of correlations can be said to be almost congruent with the conceptual relationship hypothesized in SDT.

5 Summary

In this study, we examined theoretical relationship between learning climate in English classroom and the participating students’ motivation toward the classroom activities, through the validation process of the questionnaires called the LCQ and the PCS.

In this process, first, we examined the construct validity of the LCQ and the PCS, and then, found that both the concepts had the stable internal structure as well as consistency. We also found

that these results were found to be in correspondence with the results obtained in the previous studies (e.g., Black & Deci, 2000). These findings suggested the applicability of the LCQ and the PCS in the contexts of CCDL English classes.

Second, we investigated the correlations among the LCQ, the PCS and Motivation Questionnaire. As a result, we found that the correlation patterns were almost congruent with the conceptual relationships assumed in SDT as well as the results obtained in the previous study concerning the same issue (Noels et al., 2000)⁴. The result might suggest the possibility that the hypothesized causal relationship between autonomy supportive environment and one's motivational enhancement would hold within the contexts of CCDL English classes (see, 2.2.4). We would like to further discuss this issue in the future study.

Thus, although the number of participants in this study seemed to be relatively small for the validation of the LCQ and the PCS, we could yield some pieces of evidence with respect the applicability as well as the construct validity of the questionnaires. Moreover, the findings also provided empirical foundation for exploring the causal relationship between the classroom-related environmental factors and the students' motivational enhancement. In the future study, therefore, we would like to examine not only the conceptual relationships among the variables in question, which are to be evaluated by bivariate correlation(s), but also the causal relationship(s) among the variables in terms of multivariate analyses, collecting much more responses from the CCDL participants.

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⁴ Although Noels et al. (2000) employed the measurement scales different from those used in the present study, we could compare the results observed in each of the studies with respect to a fact that both the scales were designed to assess the same concepts based on SDT.

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Appendix A

15 items in the Learning Climate Questionnaire (Black & Deci, 2000)

(The original items are available on HP of Self-Determination Theory.)

1. I feel that my instructor provides choices or options in deciding discussion topics for cyber session.
2. I feel understood by my instructor.
3. I am able to be open with my instructor during class.
4. My instructor conveyed confidence in my ability to make opinions in the cyber session.
5. I feel that my instructor accepts me.
6. My instructor made sure I really understood the goals of the course and what I need to do.
7. My instructor encouraged me to ask questions.
8. I feel a lot of trust in my instructor.
9. My instructor answers my questions fully and carefully.
10. My instructor listens to how I would like to do things.
11. My instructor handles people's emotions very well.
12. I feel that my instructor cares about me as a person.
13. I don't feel very good about the way my instructor talks to me. (Reversed)
14. My instructor tries to understand how I see things before suggesting a new way to do things.
15. I feel able to share my feelings with my instructor.

Appendix B

6 items in the Perceived Competence Scales

(The original items are available on HP of Self-Determination Theory.)

1. I feel confident in my ability to learn course materials.
2. I have been able to master course materials so far.
3. I am able to achieve my goals in this course.
4. I feel able to meet the challenge of performing well in this course.
5. I feel confident in my ability to perform classroom tasks that my instructor gave me in the class.
6. I have been able to perform well with respect to classroom activities so far.