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Students' Ratings of School Climate and School Belonging for Understanding their Effects and Relationship of Junior High Schools in Taiwan

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Abstract - This study was to explore junior high students' perception of school climate and school belonging. The main purposes of the present study were to test the relationships between school climate and school belonging. How's the correlation between the two variables? Which one has better effects on the other? Three hundred and twenty-eight junior high students in Taiwan were selected to inclusion in the investigation. A statistically significant relationship between school climate and school belonging was found. From the construction analyses, we found that the path coefficients of Model 1 and Model 2 are the same. The outcomes meant that school climate had significant effects on school belonging and school belonging also had significant effects on school climate. The results of the study can offer the relative schools for evaluating school effects and school improvement.

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I. INTRODUCTION

Every school has its unique atmosphere, culture, historical background, socio-economic status and reputation, and some of these characteristics form school climate. The school climate is not static, and it sometimes changes with the policy, the public opinion, school itself, and the quality of teachers and students. If schools want to maintain the good tradition or the good reputation, the staffs and students need to make great efforts. Peter and Dalbert's (2010) research indicated that the more the students evaluated their teachers' behavior toward them to be just, the more positively they evaluated the classroom and school climate. Junior high students feel higher levels of school belonging when they perceive that their school climate is great.

The lives of school play important roles in the lives of junior high students. The tasks of school not only educate students, but also play supportive roles to students, such as developing students' abilities to become responsible persons, able to love, work, and be lifelong learners (Cohen, 2006). Junior high students' perception of school climate affects the performance of them. Although the conception of school climate is elus-

ive, most researchers agree that students' personal perception can properly convey the good or bad of school climate (Loukas & Robinson, 2004). It is important to understand junior high students' perception of school climate, and this research analyzed the factors of school climate by investigating high school students with scale.

Students who have feeling of belonging to their schools and classes may like to join school activities, express themselves in class, be accepted by their peers, develop healthy psychology, and perform well in many aspects. The meaning of school belonging is just like school engagement. Csikszentmihalyi and Schneider (2000) indicated that students who are more engaged in school have better academic performance. Students who go to school regularly, concentrate in class, and obey the rules of the school, generally get higher grades on the tests and examinations (Wang & Holcombe, 2010).

Many literatures explored the topics of school climate (e.g. Hopson & Lee, 2011) and school belonging (e.g. Liu & Lu, 2011), but few of them explored the impact to each other and to the effects on schools. Brand, Felner, Steitsinger, Burns, and Bolton's (2008) research mentioned that the assumption of research on school improvement is that school environments will tend to remain stable over a period of time. Consistent with this assumption, Brand, Felner, Shim, Seitsinger, & Dumas's (2003) research had found relatively high levels of temporal stability in students' ratings of school climate (Brand et al., 2003). This study investigated junior high students in Taiwan with scales for better understanding their perceptions of school climate and school belonging. This study hypothesized that through the use of school climate and school belonging data generated from student perceptions can understand the situation of schools for school effects and school improvement. The literature that we collected was introduced as follows.

a) *The School Climate*

The term of school climate is not a specific noun. It can be felt by individuals, especially by the staff and students. We can say that the important components of school climate include environment and people. In the settings of school, students learn many things from it. They join various activities which design

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for them and learned not only from teachers, but also the ones that they contact with. They are affected by school climate, interpersonal relationship, and values of the society. A good school climate makes students feel safe at school, and it is important to learn if students recognize schools as a safe place.

A considerable number of studies have shown that student perceptions of school climate play important parts to students' achievement (McEvoy & Welker, 2000). In addition to academic performance, it also affects the relationship between students and their peers, and their feelings of themselves. It can help them overcome the problems that they might face in adolescence (Roeser, Eccles, & Sameroff, 2000). Positive peer relations links to enhance academic performance, develop high levels of emotional strategies and adaptive strategies, and increase commitment to school (Petrides, Sangareau, Furnham, & Frederickson, 2006). Students who get along well with peers can help them adapt themselves to the lives of grown-ups in the future. In addition, teachers play supportive roles on the school lives of students.

Some studies indicated that the good school climate can be used as a protective factor. It can ease junior high students' distress of puberty and promote their resilience of behavior (Loukas & Robinson 2004). Hopson and Lee (2011) indicated that the negative school climate will increase academic difficulty of junior high students, but the positive school climate will serve as a protective factor for students in many aspects of their school lives.

One of the indicators of school climate is that students perceive their teachers caring about them or treating them fairly (Hoy, Smith, & Sweetland, 2002). Students feel that their school with the atmosphere of support will help them adapt themselves to school and commit themselves to their learning. They feel safe to their schools (Gottfredson, Gottfredson, Payne, & Gottfredson, 2005). Peter and Dalbert (2010) indicated that the more the students perceive their teachers to treat them just, the more positively they judge their school climate.

Keiser and Schulte (2009) developed the Elementary School Ethical Climate Index (ESECI) by applying five ethical principles. One of the ethical principles is fidelity to the interactions and relationships between students and teachers, specifically *teacher to student*, *student to teacher/learning environment*, and *student to student*, and they development 58 items to measure the interactions and relationships between students and teachers. They found that there were no statistically significant relationships between student perceptions of *teacher to student*, *student to teacher/learning environment*, and *student to student* interactions and relationships. The supportive atmosphere of school will make students believe that their teachers also take supportive attitude to them.

They are willing to ask for help from their teachers (Lisi, 2004). The poor quality of the school environment is particularly harmful to junior high students. It makes junior high students feel frustrated, and behave aggression to others. It makes them be rejected easily by their peers (Maszk, Eisenberg, & Guthrie, 1999). In addition to the external problems, junior high students who are rejected by their peers also easily produce internal problems (Boivin, Hymel, & Bukowski, 1995). The lack of emotion and attention will interfere the performance of students in the classroom, and make them have difficulties in learning (Guerin, Gottfried, Oliver, & Thomas, 1994). The poor performance of students might make them feel frustrated in society in the future.

In summation of the literature, we can say that students' perception of school climate has a great impact to them. The positive school climate can improve students' academic performance and increase them social and emotional skills. In a safe environment, junior high students can take time to study, and they will be accepted by their peers. They can express themselves freely and they will be satisfied with their school. Stichter's (2008) study identified four key student school climate factors: academic learning experience, overall school satisfaction, communication, and environmental experiences. He used them to measure the effectiveness of the district goals. He also mentioned that measuring goal attainment in many school districts may not an easy task. Miron, Jones, and Kelaher-Young (2011) mentioned that student perceptions of school climate are important in understanding it, as they spend their school days in the midst of it.

b) *School belonging*

Osterman (2000) indicated that a sense of school belonging is a basic psychological need. School plays an important role in the lives of students and affects their quality of affective and social development (Mok & Flynn, 2002). School belonging means students like their schools, like to be together with their teachers and classmates, and are proud to be members of the school. Students who have high sense of school belonging usually are willing to accept the rules which set by their teachers and schools. Students' perception of school belonging usually matters with their performances at school. Sakiz, Pape, and Hoy's (2012) study showed that perceived teacher affective support was positively associated with students' perceived sense of belonging, and sense of belonging was significantly positively related to academic enjoyment.

Goodenow (1993) indicated that school belonging can be assessed by students' perception of their school. Students' high perception of their school belonging usually means that they are liked, respected and valued by their peers and teachers. Finn (1989) indicated that students who don't identify with their

school are more likely absent from their school. Those students might be absent-minded, fail to examinations, or be rejected by their peers. Rostosky, Owens, Zimmerman, and Riggle' (2003) study indicated that higher school belonging significantly decreased the odds of alcohol and marijuana use.

Fredricks, Blumenfeld, and Paris (2004) explored school engagement and they divided it as three factors: behavior, emotion, and cognition. In behavior, it refers that students attend class and do school work, make the effort and concentrate in learning and academic tasks, and participate in school activities. In emotion, it refers that student's affective reactions and sense of connecting to school (Skinner & Belmont, 1993). In cognition, it refers that student's self-regulated and strategic approach to learning (Connell & Wellborn, 1991). Gest, Welsh, & Domitrovich (2005) indicated that children show greater emotional and behavioral engagement in school if they have higher sense of relatedness to teachers. Ferreira, Cardoso, and Abrantes (2011) indicated that negative sense of school belonging has a negative impact on intrinsic motivation and on perceived learning.

In school settings, when students feel that their peers or classmates like and value them, they will have higher sense of school belonging. The degree students feel they fit in the school contexts will affect their academic achievement and their development of social skills. In Taiwan, junior high students' academic achievement is valued by students, teachers, and parents. To get good grades, students concentrate on what teachers taught, follow the rules which their classes and school set, and study hard. Usually, the students who spend most of their time on studying won't waste their time on making noises in class or trying to spoil the classroom rules. They are clever to judge things from right or wrong and behave what should do and what should not do. Their peers usually value those who get good grades, and respect them for their studying hard and behave well. Those students are easily accepted by their classmates, and they usually can be one of the class leaders. Schools are proud of them, and they usually have strong sense of school belonging. Kuperminc, Darnell, and Alvarez-Jimenez (2008) indicated that school belonging was positive and significant related to teacher expectations, and both of these variables had significant correlations with school grades and academic competence. Roeser, Midgley, and Urdan (1996) also indicated that students' perception of an emphasis on master-focused learning environment is positively related to their feelings of school belonging. Students who have high sense of belonging to their school may devote themselves in learning and improve their achievement.

II. METHOD

a) *Participants*

Three hundred and ninety junior high school students in Taiwan were selected for the participants. After exclusion for incomplete and invalid scales, three hundred and twenty-eight sets were analyzed.

b) *Measurement of the Construction*

The primary purpose of this study was to use structural equation modeling (SEM) to construct the model of school climate and school belonging for junior high students. The School Climate Scale was based on Stichter (2008) scale. The School Belonging Scale was based on the literature. Likert scales ranging from 1 to 6, they anchored "strongly disagree" to "strongly agree".

c) *Factor analysis and Construction*

The data were analyzed by using the SPSS12.0 program in advance to do factor analysis. In the analytic process, the procedure of selecting the items, factor analysis, and the tests of validity and reliability were included. The school climate was divided into three factors: Overall school satisfaction; environmental experiences; and communication experiences. The school belonging was divided into three factors: behavior, emotion, and cognition. Then, we used the AMOS 7.0 program to confirm the factors. After deleting some items, we confirmed the fit models for school climate and school belonging separately. At last, we constructed the models.

Based on the relationship between school climate and school belonging, at first, it is hypothesized that school climate had direct effect on school belonging. Thus, students perceived their school climate as being great, and they are likely to feel a great sense of school belonging. Secondly, we tested another model and it is hypothesized that school belonging had direct effects on school climate. After that, we compared the two models to assess which one is better.

III. RESULTS

a) *The Correlation Matrix*

Table 1 showed the correlation matrix and descriptive statistics of the models.

Table 1 : The sample correlation and descriptive statistics

	1	2	3	4	5	6
1 cognition	-					
2 emotion	.609	-				
3 behavior	.717	.626	-			
4 overall	.569	.551	.554	-		
5 environment	.472	.475	.495	.749	-	
6 communication	.522	.509	.521	.761	.737	-
M	17.24	18.10	12.66	16.69	16.45	21.10
SD	2.84	2.68	2.02	2.44	2.20	2.92

Table 1 shows the correlation coefficients between the factors of school climate and the factors of school belonging as well as statistical means and standard deviations. The factors of school climate was positive and significant related to the factors of school belonging.

b) The model-fit indices for the construct models

To construct the models of school climate and school belonging, we assessed the models' overall

goodness-of-fit. Model 1 is hypothesized that school climate had direct effect on school belonging. Model 2 is hypothesized that school belonging had direct effects on school climate. Seven common model-fit measures were incorporated: χ^2/df , NFI, CFI, RFI, GFI, RMSEA, and PNFI. Table 2 showed the model-fit indices for the construction models (model 1 and model 2) of school climate and school belonging.

Table 2 : Fit indices for the construction model

Fit indices	χ^2/df	NFI	CFI	RFI	GFI	RMSEA	PNFI
Recommended value	1-5	>.9	>.9	>.9	>.9	<.08	>.5
Model 1	1.316	.991	.998	.984	.990	.031	.529
Model 2	1.316	.991	.998	.984	.990	.031	.529

From Table 2, we can see that the values of the two construct models both reach the recommended values and the fit indices are the same, $\chi^2/df = 1.316 < 5$, $NFI = .991 > .9$, $CFI = .998 > .9$, $RFI = .984 > .9$, $GFI = .990$, $RMSEA = .031 < .08$, $PNFI = .529 > .5$. It meant that the external quality of the two models is good enough. From the result of the study, it demonstrated that the construction models showed good fit with the data, and both hypotheses we made were confirmed.

c) The construction models

In the models which follows, the factor overall school satisfaction mainly measured junior high students' satisfaction level to their school; the factor

environmental experiences mainly measured junior high students' actual experience to the school environment; the factor communication experiences mainly measured junior high students' actual experience about the paths of communication with their school; the factor behavior mainly measured junior high students' behavior engagement to school; the factor emotion mainly measured junior high students' emotional engagement to school; the factor cognition mainly measured junior high students' cognitive engagement to school.

The construction models of school climate and school belonging were shown in Fig.1 and Fig.2.

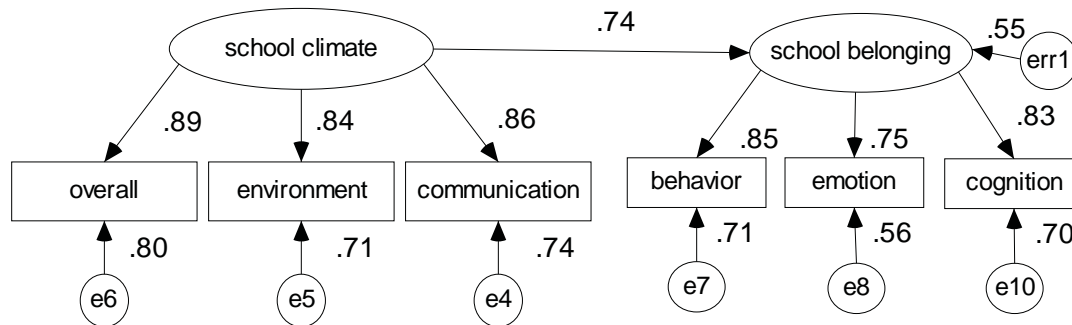


Figure 1 : The construction model of school climate towards school belonging

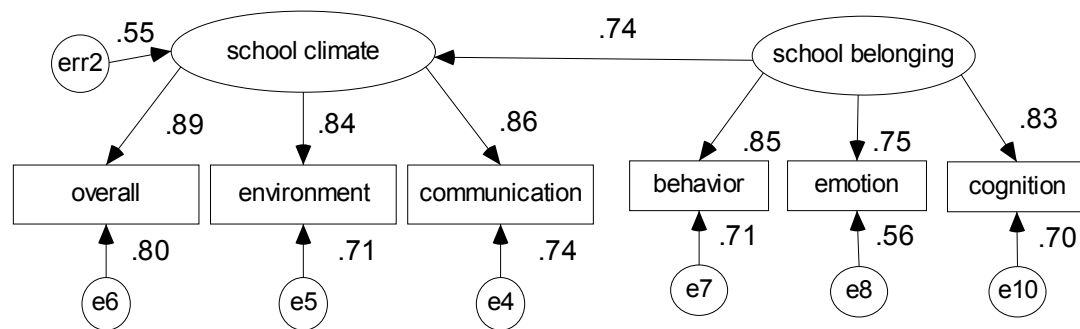


Figure 2 : The construction model of school belonging towards school climate

As shown in Fig 1 and Fig 2, we can see that the direct effects of school climate towards school belonging and the direct effects of school belonging towards school climate are both .74 ($p < .001$), and they mean that school climate has positive and significant effects on school belonging and school belonging also has positive and significant effects on school climate.

The primary components of school climate are overall school satisfaction, environmental experience, and communication experience. The highest factor loading is overall school satisfaction, and in turn are communication experiences and environment experiences. It means that students perceive overall school satisfaction as the most important component of the three. The major components of school belonging are behavior, emotion, and cognition. The highest factor loading is behavior, and in turns are cognition and emotion. It means that students perceive behavior as the most important component of school belonging.

IV. DISCUSSION

The present study sought to measure junior high students' ratings that provided information on school climate and school belonging and hence for testing the models we hypothesized to understand which one variable is ahead to the other. We first tested the measurement models with six latent variables: overall school satisfaction, environmental experiences, communication experiences, behavior, emotion, and cognition. Each of latent variables was indicated by three to five items. The major items were shown as follows. The items belonging to *overall school satisfaction* were just like: I am satisfied with the extra-curricular activities which my school arranges; my teachers and classmates appreciate my performance; I trust my teachers and classmates of my school. The items belonging to *environmental experiences* were just like: The buildings and playground of my school are well maintained; the school equipments are sufficient; this is a cohesion school. The items belonging to *communication experiences* were there are appropriated communication channels between school and students; my school informs me the ways of entering a higher

school; the item belonging to *behavior* was like: I like to join the activities that school holds; the items belonging to *emotion* were like: I feel close to people in this school; I am happy to be at this school; the items belonging to *cognition* was like: I feel like I am part of this school; I am proud of belonging to this school. The models had acceptable fit to the data.

The relations between the study variables were further analyzed by using the AMOS 7 program. The correlation between school climate and school belonging is positive and significant. It means that when students perceive and rate their school climate as great, they may have high sense of school belonging, and vice versa. The construction models, showing standardized regression weights, were displayed in Fig. 1 and Fig 2. The models had acceptable fit to the data. From the outcomes of the construction models, we can find that the effects are the same either school climate towards school belonging, or school belonging towards school climate. We can say that the statuses of school climate and school belonging are quite the same according to junior high students' ratings. From the literature we introduced, we know that students' ratings of school climate and school belonging are important indicators for schools. Understanding students' actual perceptions can help schools evaluate their effectiveness, students' learning achievement, where they should improve, or/and what they should make great effort.

In summation of this outcome, we can say that the outcomes of the study can explain some learning situations of junior high schools in Taiwan. Benner, Graham, and Mistry (2008) indicated that student perceptions of school belonging and school climate are related to measures of student engagement and academic achievement. If students feel satisfaction about the overall school, environment, and the communicative path with school, they may feel safe at school, and they can learn well at the same time.

A school is a microcosm of society. Teachers and students are important figures of schools, and the interaction between them has a great impact on them. Osher and Fleischman (2005) indicated that enhancing academic achievement, improving social skills, and

maintaining teacher quality correlate positively with school climate. Fullan (2005) indicated that school to be an effective organization should set goals and evaluate the outcomes. Exploring students' view about school climate can be the indicators which the effectiveness of the goals accomplished. Students engage themselves in school activities and academic learning may produce the sense of school belonging and schools' effectiveness may also improve.

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