

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

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7

8 **Abstract**

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

19

20 **Index terms**— school climate, school belonging, construction.

21 **1 Introduction**

22 very school has its unique atmosphere, culture, historical background, socio-economic status and reputation, and
23 some of these characteristics form school climate. The school climate is not static, and it sometimes changes
24 with the policy, the public opinion, school itself, and the quality of teachers and students. If schools want to
25 maintain the good tradition or the good reputation, the staffs and students need to make great efforts. Peter and
26 Dalbert's (2010) research indicated that the more the students evaluated their teachers' behavior toward them
27 to be just, the more positively they evaluated the classroom and school climate. Junior high students feel higher
28 levels of school belonging when they perceive that their school climate is great. Eive, most researchers agree that
29 students' personal perception can properly convey the good or bad of school climate (Loukas & Robinson, 2004).
30 It is important to understand junior high students' perception of school climate, and this research analyzed the
31 factors of school climate by investigating high school students with scale.

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

38 Many literatures explored the topics of school climate (e.g. Hopson & Lee, 2011) and school belonging (e.g.
39 Liu & Lu, 2011), but few of them explored the impact to each other and to the effects on schools. Brand,
40 Felner, Steitsinger, Burns, and Bolton's (2008) research mentioned that the assumption of research on school
41 improvement is that school environments will tend to remain stable over a period of time. Consistent with
42 this assumption, Brand, Felner, Shim, Steitsinger, & Dumas's (2003) research had found relatively high levels of

43 temporal stability in students' ratings of school climate (Brand et al., 2003). This study investigated junior high
44 students in Taiwan with scales for better understanding their perceptions of school climate and school belonging.
45 This study hypothesized that through the use of school climate and school belonging data generated from student
46 perceptions can understand the situation of schools for school effects and school improvement. The literature
47 that we collected was introduced as follows.

48 **2 a) The School Climate**

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

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54 The lives of school play important roles in the lives of junior high students. The tasks of school not only
55 educate students, but also play supportive roles to students, such as developing students' abilities to become
56 responsible persons, able to love, work, and be lifelong learners (Cohen, 2006). Junior high students' perception
57 of school climate affects the performance of them. Although the conception of school climate is elus-for them and
58 learned not only from teachers, but also the ones that they contact with. They are affected by school climate,
59 interpersonal relationship, and values of the society. A good school climate makes students feel safe at school,
60 and it is important to learn if students recognize schools as a safe place.

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

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

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

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

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

93 In summation of the literature, we can say that students' perception of school climate has a great impact to
94 them. The positive school climate can improve students' academic performance and increase them social and
95 emotional skills. In a safe environment, junior high students can take time to study, and they will be accepted
96 by their peers. They can express themselves freely and they will be satisfied with their school. Stichter's (2008)
97 study identified four key student school climate factors: academic learning experience, overall school satisfaction,
98 communication, and environmental experiences. He used them to measure the effectiveness of the district goals.
99 He also mentioned that measuring goal attainment in many school districts may not an easy task. Miron, Jones,
100 and Kelaher-Young (2011) mentioned that student perceptions of school climate are important in understanding
101 it, as they spend their school days in the midst of it. b) School belonging Osterman (2000) indicated that a sense
102 of school belonging is a basic psychological need. School plays an important role in the lives of students and

103 affects their quality of affective and social development (Mok & Flynn, 2002). School belonging means students
104 like their schools, like to be together with their teachers and classmates, and are proud to be members of the
105 school. Students who have high sense of school belonging usually are willing to accept the rules which set by
106 their teachers and schools. Students' perception of school belonging usually matters with their performances
107 at school. Sakiz, Pape, and Hoy's (2012) study showed that perceived teacher affective support was positively
108 associated with students' perceived sense of belonging, and sense of belonging was significantly positively related
109 to academic enjoyment. Goodenow (1993) indicated that school belonging can be assessed by students' perception
110 of their school. Students' high perception of their school belonging usually means that they are liked, respected
111 and valued by their peers and teachers. Finn (1989) indicated that students who don't identify with their school
112 are more likely absent from their school. Those students might be absent-minded, fail to examinations, or be
113 rejected by their peers. Rostosky, Owens, Zimmerman, and Riggles' (2003) study indicated that higher school
114 belonging significantly decreased the odds of alcohol and marijuana use.

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

123 In school settings, when students feel that their peers or classmates like and value them, they will have higher
124 sense of school belonging. The degree students feel they fit in the school contexts will affect their academic
125 achievement and their development of social skills. In Taiwan, junior high students' academic achievement is
126 valued by students, teachers, and parents. To get good grades, students concentrate on what teachers taught,
127 follow the rules which their classes and school set, and study hard. Usually, the students who spend most of
128 their time on studying won't waste their time on making noises in class or trying to spoil the classroom rules.
129 They are clever to judge things from right or wrong and behave what should do and what should not do. Their
130 peers usually value those who get good grades, and respect them for their studying hard and behave well. Those
131 students are easily accepted by their classmates, and they usually can be one of the class leaders. Schools are
132 proud of them, and they usually have strong sense of school belonging. Kuperminc, Darnell, and Alvarez-Jimenez
133 (2008) indicated that school belonging was positive and significant related to teacher expectations, and both of
134 these variables had significant correlations with school grades and academic competence. Roeser, Midgley, and
135 Urdan (1996) also indicated that students' school belonging. Students who have high sense of belonging to their
136 school may devote themselves in learning and improve their achievement.

137 **5 II.**

138 **6 Method a) Participants**

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

141 **7 b) Measurement of the Construction**

142 The primary purpose of this study was to use structural equation modeling (SEM) to construct the model of
143 school climate and school belonging for junior high students. The School Climate Scale was based on Stichter
144 (2008) scale. The School Belonging Scale was based on the literature. Likert scales ranging from 1 to 6, they
145 anchored "strongly disagree" to "strongly agree".

146 **8 c) Factor analysis and Construction**

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

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

158 **9 III.**

159 **10 Results**

160 **11 a) The Correlation Matrix**

161 Table 1 showed the correlation matrix and descriptive statistics of the models. perception of an emphasis on
162 master-focused learning environment is positively related to their feelings of 1 shows the correlation coefficients
163 between the factors of school climate and the factors of school belonging as well as statistical means and standard
164 deviations. The factors of school climate was positive and significant related to the factors of school belonging.

165 **12 b) The model-fit indices for the construct models**

166 To construct the models of school climate and school belonging, we assessed the models' overall goodness-of-fit.
167 Model 1 is hypothesized that school climate had direct effect on school belonging. Model 2 is hypothesized that
168 school belonging had direct effects on school climate. Seven common model-fit measures were incorporated: 2 /
169 df, NFI, CFI, RFI, GFI, RMSEA, and PNFI. Table 2 showed the model-fit indices for the construction models
170 (model 1 and model 2) of school climate and school belonging. From Table 2, we can see that the values of the
171 two construct models both reach the recommended values and the fit indices are the same, 2 / df =1.316<5,
172 NFI=.991>.9, CFI=.998>.9, RFI=.984>.9, GFI=.990, RMSEA=.031<.08, PNFI=.529>.5. It meant that the
173 external quality of the two models is good enough. From the result of the study, it demonstrated that the
174 construction models showed good fit with the data, and both hypotheses we made were confirmed.

175 **13 c) The construction models**

176 In the models which follows, the factor overall school satisfaction mainly measured junior high students'
177 satisfaction level to their school; the factor environmental experiences mainly measured junior high students'
178 actual experience to the school environment; the factor communication experiences mainly measured junior high
179 students' actual experience about the paths of communication with their school; the factor behavior mainly
180 measured junior high students' behavior engagement to school; the factor emotion mainly measured junior high
181 students' emotional engagement to school; the factor cognition mainly measured junior high students' cognitive
182 engagement to school.

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

184 **14 Discussion**

185 The present study sought to measure junior high students' ratings that provided information on school climate
186 and school belonging and hence for testing the models we hypothesized to understand which one variable
187 is ahead to the other. We first tested the measurement models with six latent variables: overall school
188 satisfaction, environmental experiences, communication experiences, behavior, emotion, and cognition. Each
189 of latent variables was indicated by three to five items. The major items were shown as follows. The items
190 belonging to overall school satisfaction were just like: I am satisfied with the extracurricular activities which my
191 school arranges; my teachers and classmates appreciate my performance; I trust my teachers and classmates of
192 my school. The items belonging to environmental experiences were just like: The buildings and playground of my
193 school are well maintained; the school equipments are sufficient; this is a cohesion school. The items belonging to
194 communication experiences were there are appropriated communication channels between school and students;
195 my school informs me the ways of entering a higher school; the item belonging to behavior was like: I like to join
196 the activities that school holds; the items belonging to emotion were like: I feel close to people in this school; I
197 am happy to be at this school; the items belonging to cognition was like: I feel like I am part of this school; I
198 am proud of belonging to this school. The models had acceptable fit to the data.

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

210 In summation of this outcome, we can say that the outcomes of the study can explain some learning situations
211 of junior high schools in Taiwan. Benner, Graham, and Mistry (2008) indicated that student Volume XIII Issue
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Figure 1:

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
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Figure 2:

Fit indices	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

Figure 3: Table 2 :

1	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	-	

Figure 4: Table 1 :

213 [Children and Youth Services Review] , *Children and Youth Services Review* 33 p. .

214 [-A)] -A), 64.

215 [Brand et al. ()] 'A large scale study of the assessment of the social environment of middle and secondary schools: The validity and utility of teachers' ratings of school climate, cultural pluralism, and safety problems for understanding school effects and school improvement'. S Brand , R D Felner , A Steitsinger , A Burns , N Bolton . *Journal of School Psychology* 2008. 46 p. .

219 [Wang and Holcombe ()] 'Adolescents' perceptions of classroom environment, school engagement, and academic achievement'. M T Wang , R Holcombe . *American Educational Research Journal* 2010. 47 p. .

221 [Mcevoy and Welker ()] 'Antisocial behavior, academic failure, and school climate: A critical review'. A Mcevoy , R Welker . *Journal of Emotional and Behavioral Disorders* 2000. 8 p. .

223 [Rostosky et al. ()] 'Associations among sexual attraction status, school belonging, and alcohol and marijuana use in rural high school students'. S S Rostosky , G P Owens , R S Zimmerman , E D B Riggle . *Journal of Adolescence* 2003. 26 p. .

226 [Csikszentmihalyi and Schneider ()] *Becoming adult: How teenagers prepare for the world*, M Csikszentmihalyi , B Schneider . 2000. New York: Basic Books.

228 [Gest et al. ()] 'Behavioral predictors of changes in social relatedness and liking school in elementary school'. S D Gest , J A Welsh , C E Domitrovich . *Journal of School Psychology* 2005. 43 p. .

230 [Connell and Wellborn ()] 'Competence, autonomy, and relatedness: A motivational analysis of self-system processes'. J P Connell , J G Wellborn . *self processes in development: Minnesota symposium on child psychology*, M R Gunnar, & L A Sroufe (ed.) (Chicago) 1991. University of Chicago Press. p. .

233 [Mok and Flynn ()] 'Determinants of students' quality of school life: A path model'. M M Mok , M Flynn . *Learning Environments Research* 2002. 5 p. .

235 [Benner et al. ()] 'Discerning direct and mediated effects of ecological structures and processes on adolescents' educational outcomes'. A D Benner , S Graham , R S Mistry . *Developmental Psychology* 2008. 44 (3) p. .

237 [Peter and Dalbert ()] 'Do my teachers treat me justly? Implications of students' justice experience for class climate experience'. F Peter , C Dalbert . *Contemporary Educational Psychology* 2010. 35 p. .

239 [Sakiz et al. ()] 'Does perceived teacher affective support matter for middle school students in mathematics classrooms?'. G Sakiz , S J Pape , A W Hoy . *Journal of School Psychology* 2012. 50 p. .

241 [Loukas and Robinson ()] 'Examining the moderating role of perceived school climate in early adolescent adjustment'. A Loukas , S Robinson . *Journal of Research on Adolescence* 2004. 14 p. .

243 [Fullan ()] *Leadership & sustainability: Systemthinkers in action*, M Fullan . 2005. Thousand Oaks, CA: Corwin Press.

245 [Brand et al. ()] 'Middle school improvement and reform: Development and validation of a school-level assessment of climate, cultural pluralism, and school safety'. S Brand , R D Felner , M S Shim , A Seitsinger , T Dumas . *Journal of Educational Psychology* 2003. 95 p. .

248 [Hopson and Lee ()] *Mitigating the effect of family poverty on academic and behavioral outcomes: The role of school climate in middle and high school*, L M Hopson , E Lee . 2011.

250 [Ferreira et al. ()] 'Motivation and relationship of the student with the school as factors involved in the perceived learning'. M Ferreira , A P Cardoso , J L Abrantes . *Procedia-Social and Behavioral Sciences* 2011. 29 p. .

252 [Skinner and Belmont ()] 'Motivation in the classroom: Reciprocal effect of teacher behavior and student engagement across the school year'. E A Skinner , M J Belmont . *Journal of Educational Psychology* 1993. 85 p. .

255 [Kuperminc et al. ()] 'Parent involvement in the academic adjustment of Latino middle and high school youth: Teacher expectations and school belonging as mediators'. G P Kuperminc , A J Darnell , A Alvarez-Jimenez . *Journal of Adolescence* 2008. 31 p. .

258 [Roeser et al. ()] 'Perceptions of the school psychological environment and early adolescents-psychological and behavioral functioning in school: The mediating role of goals and belonging'. R W Roeser , C Midgley , T Urdan . *Journal of Educational Psychology* 1996. 88 p. .

261 [Osher and Fleischman ()] 'Positive culture in urban schools'. D Osher , S Fleischman . *Educational Leadership* 2005. 62 (6) p. .

263 [Maszk et al. ()] 'Relations of children's social status to their emotionality and regulation: A short-term longitudinal study'. P Maszk , N Eisenberg , I K Guthrie . *Merrill-Palmer Quarterly* 1999. 45 p. .

265 [Roeser et al. ()] 'School as a context of early adolescents' academic and social-emotional development: A summary of research findings'. R W Roeser , J S Eccles , A J Sameroff . *Elementary School Journal* 2000. 100 p. .

14 DISCUSSION

268 [Gottfredson et al. ()] 'School climate predictors of school disorder: Results from a national study of delinquency
269 prevention in schools'. G D Gottfredson , D C Gottfredson , A A Payne , N C Gottfredson . *Journal of Research
270 in Crime and Delinquency* 2005. 42 p. .

271 [Fredricks et al. ()] 'School engagement: Potential of the concept, state of the evidence'. J A Fredricks , P C
272 Blumenfeld , A H Paris . *Review of Educational Research* 2004. 74 p. .

273 [Keiser and Schulte ()] 'Seeking the sense of community: A comparison of two elementary schools' ethical
274 climates'. K A Keiser , L E Schulte . *The School Community Journal* 2009. 19 (2) p. .

275 [Cohen ()] 'Social, emotional, ethical, and academic education: Creating a climate for learning, participation in
276 democracy, and well-being'. J Cohen . *Harvard Educational Review* 2006. 76 (2) p. .

277 [Stichter ()] 'Student school climate perceptions as a measure of school district goal attainment'. K Stichter .
278 *Journal of Educational Research & Policy Studies* 2008. 8 (1) p. .

279 [Osterman ()] 'Students' need for belonging in the school community'. K F Osterman . *Review of Educational
280 Research* 2000. 70 (3) p. .

281 [Guerin et al. ()] 'Temperament and school functioning during early adolescence'. D W Guerin , A W Gottfried
282 , P H Oliver , C W Thomas . *Journal of Early Adolescence* 1994. 14 p. .

283 [Hoy et al. ()] 'The development of the organizational climate index for high schools: Its measure and relationship
284 to faculty trust'. W K Hoy , P A Smith , S R Sweetland . *The High School Journal* 2002. 86 p. .

285 [Miron et al. ()] 'The kalamazoo promise and perceived changes in school climate'. G Miron , J N Jones , A J
286 Kelaher-Young . *Education Policy Analysis Archives* 2011. 19 (17) p. .

287 [Lisi ()] *The personalization of the school environment: The relationship of students' access to support from an
288 adult with student adjustment outcomes experiences of school climate*, A W Lisi . 2004.

289 [Goodenow ()] 'The psychological sense of school membership among adolescents: Scale development and
290 educational correlates'. C Goodenow . *Psychology in the Schools* 1993. 30 p. .

291 [Boivin et al. ()] 'The roles of social withdrawal, peer rejection, and victimization by peers in predicting loneliness
292 and depressed mood in childhood'. M Boivin , S Hymel , W M Bukowski . *Development and Psychopathology*
293 1995. 7 p. .

294 [Petrides et al. ()] 'Trait emotional intelligence and children's peer relations at school'. K V Petrides , Y
295 Sangareau , A Furnham , N Frederickson . *Social Development* 2006. 15 p. .

296 [Liu and Lu ()] 'Trajectories of Chinese students' sense of school belonging and academic achievement over the
297 high school transition period'. Y Liu , Z Lu . *Learning and Individual Differences* 2011. 21 p. .

298 [Finn ()] 'Withdrawing from school'. J Finn . *Review of Educational Research* 1989. 59 p. .