Introduction

A large number of studies have focused on the social outcomes (e.g., social behavior, adaptation, belongingness, etc.) of school-age children (e.g., Birch, & Ladd, 1996; Wentzel, Donlan, & Morrison, 2012). Such studies have found that to understand children's social outcomes, environmental factors, especially classroom environments, are of significance; as children learn social norms through peer interactions in the classroom. In particular, it has been found that in classrooms with prosocial or positive emotional climates and good teacher-student relationships, children's social outcomes, such as academic engagement, social behavior, and classroom adjustment, are commonly promoted (Jennings & Greenberg, 2009). In addition to environmental input, gender has also been found to be of great importance, frequently representing one of the main or control variables predicting social outcomes.

In essence, the present research tested the person-environment fit in the relationship between gender and social environment; specifically, person-environment fit refers to the notion that optimal outcomes can be obtained by optimizing the interaction between personal characteristics and environments (Eccles et al., 1993; Fraser & Fisher, 1983). Consequently, in this study, we tested the interaction between classroom environments and gender in predicting social outcomes.

Gender differences in social outcomes

It is commonly believed that girls engage in more social behaviors or interactions (e.g., prosocial behaviors) than boys (e.g., Eisenberg & Fabes, 1998; Rose & Rudolph, 2006). Several possible reasons for such gender differences have been posited (see Helgeson, 2017), but one widely accepted explanation is the influence of social norms. That is, girls are expected to behave in a more socially appropriate manner than boys, and this promotes socially desirable behaviors in girls. Indeed, gender differences in terms of prosocial behaviors or prosociality have repeatedly been reported. Numerous studies have found that girls tend to show more prosocial behaviors than boys (e.g., Bellmore, Ma, You, & Hughes, 2012; Captuti, Lecce, Pagnin, & Banerjee, 2012; for more recent findings see also Eisenberg, Spinrad, & Knafo, 2015).

It should also be noted that several confounding results have been reported in the existing literature on this topic; however, for some of these studies, such results have been caused by a failure to conduct significant testing of gender differences and/or the results yielded extremely small effect sizes. Furthermore, some studies based on self-report prosocial ratings have failed to identify gender differences (Furman &

Buhrmester, 1985; Patterson, Kupersmidt, & Griesler, 1990), while others have found significant gender differences (see Rose & Rudolph, 2006). Moreover, although a thorough meta-analytic review has confirmed that there is an overall *significant* gender difference in prosocial behaviors ($d = .20$, 95%CI [.18, .22]), the effect sizes have significantly varied across studies (Eisenberg & Fabes, 1998).

In terms of psychological well-being, which we regard as a social outcome, existing literature has indicated that girls report higher levels of stress-related outcomes than boys and that this is a result of girls' high frequency of exposure to stressful *interpersonal* life events. Moreover, peer victimization literature has also found that relational victimization, which degrades relationships between victims and others (e.g., through rumors), tends to be more common among girls. Thus, relational victimization is one of the main predictors of psychological ill-being (Card, Stucky, Sawalani, & Little, 2008; Marshall, Arnold, Rolon-Arroyo, & Griffith, 2015).

On the other hand, some studies have failed to perform significant testing for gender differences regarding peer-group stress (Rudolph & Hammen, 1999) and peer victimization by peer groups (Baldry & Winkel, 2003; Crick & Grotpeter, 1996). Nevertheless, both intensive reviews and meta-analytic studies have confirmed that the gender difference in stress-related outcomes is small and the effect sizes varied across studies (for meta-analytic reviews: Card et al., 2008; for reviews: Rose & Rudolph, 2006). This between-studies variance suggests the possibility of the existence of moderator variables. Thus, gender differences may manifest in classrooms with specific social-environmental features.

Classroom social goal structures

In the present study, we have focused on the classroom environment, considering it to represent one of the moderators that could explain the abovementioned inconsistencies in the existing literature. In classroom environment research, previous literature concerning achievement goals has focused on goal structures, which are the goals emphasized and shared in classrooms (e.g., Anderman & Patrick, 2012; Murayama & Elliot, 2009; Skaalvik, Federici, Wigfield, & Tange, 2017).

Goals, especially social goals, are extremely important in Japanese education. In Japanese public elementary schools, a classroom is often defined as a community in which a classroom teacher and children spend substantial amounts of time together, not only engaging in academic lessons, but also special activities such as school festivals and athletic meets, and everyday routines such as lunch (including preparing food) and cleaning the classroom. These activities are conducted to encourage cooperation and

raise school spirits (for a comparative review of Japanese education and American education, see Wiezorec, 2008). Consequently, classroom management has great importance, and in most public elementary schools, classroom goals for each year are set at the beginning of the school year. In general, these goals tend to relate to social behavior (e.g., "One for all, all for one" which is a typical example of a goal presented in Japanese public elementary school classrooms, emphasizing classroom harmony and a spirit of cooperation), and academic goals are given relatively less importance. Such social goals are critical for maintaining interpersonal relationships among classroom members, ensuring an adaptive classroom norm, and allowing children to spend time prosocially and in a mutually respectful manner. However, if the classroom environment is maladaptive, it undermines both teacher and student outcomes.

In the present study, we focused on the social goals that are emphasized in the classroom. The extant literature has focused on *personal* social goals that represent self-reported efforts to act in prosocial and socially responsible ways, and thus these goals reflect desires to achieve particular social outcomes (Wentzel, 1998). Social goals are often categorized into two types: prosocial and compliance (Wentzel, 1991; note that compliance goals are also sometimes labeled *responsibility goals*, Wentzel, 1994). Specifically, prosocial goals involve striving for mutual respect and aiming to perform prosocial behaviors, whereas compliance goals concern aiming to uphold classroom rules, such as being quiet. Existing research has found that compliance goals positively predict children's academic achievement (Wentzel, 1998) and academic self-efficacy (Patrick, Hicks & Ryan, 1997), but negatively predict peer acceptance (Wentzel, 1994), whereas prosocial goals positively predict peer acceptance and prosocial behaviors (Wentzel, 1994). In a similar vein, it was found that friendship-approach goals, which are similar constructs to prosocial goals, predict academic help-seeking (Roussel, Elliot, & Feltman, 2011). However, in previous research, both forms of social goals (prosocial and compliance) have been considered to be important for promoting student outcomes, which suggests that the possible unique contribution of each type of goal has not yet been carefully interpreted (e.g., it has not been discussed that compliance goals can be maladaptive for student outcomes).

Hamilton, Blumenfeld, Akoh, and Miura (1990) stated that both aspiration and duty can be conveyed in messages provided by teachers (i.e., agents of socialization). Here, duty relates to the minimum standard of behavior, and violation of this duty results in punitive sanctions. On the other hand, aspiration relates to a desire to achieve a certain standard, and underperformance is not necessarily punished, provided the individual is making an effort to achieve the standard. In classroom life, social and

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academic procedures or conventions (e.g., being on time and being prepared) are categorized as duties, whereas morality (e.g., comforting others, playing fairly, and sharing) is categorized as an aspiration (Blumenfeld, Pintrich, & Hamilton, 1987; Hamilton, Blumenfeld, Akoh, & Miura, 1989; Hamilton et al., 1990). Thus, it can be considered that duty is conceptually similar to compliance goals, and that aspiration is equivalent to prosocial goals.

Considering the above, we can define the social goals emphasized in the classroom as relating to either prosocial goal structure or compliance goal structure. The former relates to classroom goals and concerns achieving a desired standard such as helping peers, while the latter relates to standards that individuals must follow, such as remaining quiet during class. Substantial research has suggested that prosocial and positive emotional classroom environments relate to adaptive social and academic outcomes (Jennings & Greenberg, 2009; Reyes, Brackett, Rivers, White, & Salovey, 2012), and that prosocial goal structure may contribute to promoting optimal outcomes. In contrast, however, compliance goal structure may be related to maladaptive outcomes and may be insufficient for promoting optimal outcomes (Blumenfeld et al., 1987). In classrooms that focus on compliance (i.e., conventions or procedures), students may be intimidated by punishments associated with the violation of rules (see Hamilton et al., 1990), and such controlled atmospheres promote psychological reactance, which undermines children's willingness to share the goals or standards that teachers emphasize (Dillard & Shen, 2005).

The indices of social outcomes

In this study, we focused on the social outcomes including: a) children's prosocial behaviors, and b) classroom adjustment. Prosocial behaviors are defined as voluntary and intentional behaviors that result in benefits for others; although, the underlying motivation to perform such behaviors is unspecified and may be positive, negative, or both (Eisenberg & Miller, 1987; Eisenberg, VanSchyndel, & Spinrad, 2016).

Classroom adjustment is an important social outcome for school-aged children. In previous literature, school adjustment has been regarded as a multidimensional construct with several specific aspects, such as academic achievement, drop-out, motivation, classroom behavior (Cillessen & van den Berg, 2012), and attitudes toward others (Berndt & Keefe, 1995). On the other hand, some studies have determined children's level of school adjustment by considering its narrower aspects (e.g., Birch & Ladd, 1997; Honma & Uchiyama, 2014; Posner & Vandell, 1999), which emphasize

aspects of children's affective experiences at school or in classrooms, such as school liking and school-related emotional well-being. These aspects seem to reflect children's global state of adjustment at school because they focus on the children's subjective experiences at their schools or in their classrooms. In a similar vein, the present study focused on children's affective experiences of school adjustment, although we recognize the multidimensionality of classroom adjustment. In particular, we paid attention to children's sense of adjustment in the classroom, because in Japan, the classroom environment may have more powerful and direct effects than the school environment on school-aged children. For this study, children's sense of adjustment at school was simply labeled *classroom adjustment*.

Few studies have directly examined gender differences in relation to classroom adjustment; however, there are some relevant findings in this regard. For example, girls reported higher levels of satisfaction with school (Verkuyten & Thijs, 2002), school belongingness (Goodenow, 1993), and displayed a more positive attitude toward school (Chen, Chen, & Kaspar, 2001) than boys. In addition, it has been found that the classroom climate can affect boys' and girls' classroom adjustment differently. For example, Townsend and Hicks (1997) examined the effect of classroom goal structures on children's social satisfaction. When comparing cooperative classrooms and non-cooperative classrooms, they found that girls felt greater social satisfaction in cooperative classrooms than in non-cooperative classrooms, whereas boys had similar levels of social satisfaction across both types of classrooms.

Person-environment fit

In the present research, the person-environment fit was tested in order to delineate the interaction between gender and classroom social goal structures. Person-environment fit is a theoretical framework that describes the interaction effect between persons and their environment, and it can be examined using a match and mismatch hypothesis (Murayama & Elliot, 2009).

The match hypothesis posits that congruence between personal characteristics (e.g., goal orientation) and environmental influence (e.g., goals emphasized in the classroom) promotes optimal outcomes, or that the congruence accentuates the basic pattern. In this case, girls would show higher levels of social outcomes than boys in a classroom that sets prosocial goals. If this match hypothesis can be proven, it will be found through an examination of classroom adjustment, as studies have shown that girls appear predisposed towards somewhat higher levels of prosocial behaviors than boys,

albeit the effect size varies across studies (Eisenberg et al., 1998).

Murayama and Elliot (2009) suggested that the mismatch hypothesis contends that discrepancies between personal characteristics and environments can produce various types of positive and/or negative outcomes. One initial possibility is that the negative influence of personal characteristics can be mitigated (a *mitigation effect*) by the effect of the environment. For example, boys (who have lower prosocial behavior scores than girls) may show higher levels of prosocial behaviors in classrooms that have prosocial goal structure. Although it is likely that prosocial goal structure can have positive effects for most students, boys may enjoy more positive effects because, in comparison to girls, they still have room for the development of prosocial behaviors. A second possibility is that the mismatch can produce negative outcomes (an *exacerbation effect*). Boys tend to have lower social goal orientation than girls (Wentzel et al., 2010) and more compliance issues, meaning academic dishonesty (i.e., academic cheating) is more prevalent amongst boys (Whitley, Nelson, & Jones, 1999). Consequently, boys tend to have maladaptive social outcomes (i.e., low frequency of prosocial behaviors and low classroom adjustment) in classrooms with high compliance goal structure because the compliance goal structure creates a controlling atmosphere that may cause anxiety or reactance for those with mismatched goals (i.e., boys).

Hypotheses

As already discussed, in our analysis we hypothesized that[1]:

1. According to the match hypothesis, girls will show higher levels of classroom adjustment than boys in classrooms with high prosocial goal structure.

2. According to the mismatch hypothesis, boys will show higher levels of prosocial behaviors in classrooms with high prosocial goal structure.

3. According to the mismatch hypothesis, boys will tend to have maladaptive social outcomes (i.e., low frequency of prosocial behaviors and low classroom adjustment) in classrooms with high compliance goal structure.

In summary, in this research, we sought to examine the interaction between gender and classroom social goal structures. Specifically, we focused on the classroom differences that moderate the gender differences in social outcomes.

Method

Participants and procedure

A survey was conducted from September to October 2014. The sample consisted of 3,609 Japanese public elementary school children (fifth graders = 1,712, sixth graders = 1,897; girls = 1,756, boys = 1,817; 36 children were unspecified) from 114 classrooms in 23 schools located in three cities (there were a total of 117 elementary schools in these three cities) in the Kansai region. Schools were recruited by contacting the targeted cities' boards of education, and then the respective school administrators. Before completing the questionnaire, all participating children were informed that the information they provided would be strictly confidential and that they had the right to refuse to answer the questionnaire. Only the children who agreed to participate were asked to answer and return the questionnaire. Although the exact refusal rate is unknown, the potential number of children in the schools was 3,827, indicating that approximately 94% of the targeted children completed the questionnaire. Feedback was given according to each school's instructional requirements.

Measures

Classroom social goal structures, prosocial behaviors, and classroom adjustment were all assessed through a questionnaire. All the items assessing these topics were scored using a five-point scale ranging from 1 (*not at all true*) to 5 (*very true*).

Classroom social goal structures. To assess classroom social goal structures, the Classroom Social Goal Structure Scale (Ohtani, Okada, Nakaya, & Ito, 2016) was used. This scale features eight items assessing prosocial goal structure (sample item: "In our class, helping each other is one of the most important behaviors") and five items assessing compliance goal structure (sample item: "In our class, keeping quiet during class is one of the most important behaviors"). The reliability and validity of the original scale have been documented in a prior study (Ohtani et al., 2016). To assess the internal consistency of these scales, the coefficient omega was calculated, which demonstrated adequate internal consistency ($\omega = .89$ for prosocial goal structure; $\omega = .72$ for compliance goal structure).

Prosocial behaviors. To assess prosocial behaviors in the classroom, we used one of the subscales of the Social Skill Scale developed by Togasaki and Itano (2001) that is purported to measure behaviors to develop social relations. This scale features seven items (sample item: "I help my friends when they are in trouble"). The scale was found to have acceptable internal consistency ($\omega = .82$).

Classroom adjustment. To assess classroom adjustment, we used the Subjective Adjustment Scale for Elementary School Children (Emura & Okubo, 2012).

This scale is commonly used to assess children's sense of classroom adjustment in Japanese populations, and its reliability and validity have been demonstrated in past studies (e.g., Emura & Okubo, 2012). This scale consists of three factors; however, to reduce the total number of items in the overall survey, we chose to use only one subscale. Consequently, the "sense of comfort" subscale was used, which featured five items (sample item: "I feel comfortable being in this class"). The scale was found to have acceptable internal consistency ($\omega = .94$)

Results

Descriptive statistics

Descriptive statistics and Pearson's correlation coefficients are presented in Table 1, as well as information on the amount of missing data for each scale. The missing rate ranged from 1.58% to 6.90% according to the different scales. The analyses were performed using IBM SPSS 23.0. Notably, prosocial goal structure was found to positively correlated with prosocial behaviors and classroom adjustment ($r = .48, .53$, respectively). Further, compliance goal structure also showed a positive correlation with prosocial behaviors and classroom adjustment ($r = .39, .36$, respectively). Meanwhile, gender differences in regard to the outcome variables were only found for prosocial behaviors, $t (3427.33) = 10.37, p < .001, d = 0.34$ (Table 2).

Classroom-level variance

We used Mplus version 7.0 (Muthén & Muthén, 1998-2012) for subsequent analyses. The missing data were examined using full information maximum likelihood estimation (FIML). The first aim of the analysis was to test whether the variables significantly varied between classrooms. Consequently, classroom social goal structures were indeed found to significantly vary among classrooms, with intra-class correlation (ICC) equaling .24 ($p < .001$) for prosocial goal structure and .19 ($p < .001$) for compliance goal structure. We also checked the reliability (occasionally called "ICC2"), of classroom goal structures, in case the aggregation of students' ratings caused a biased estimation of the classroom level (Bliese, 2000); consequently, the reliabilities were found to be relatively high in both prosocial goal structure and compliance goal structure (ICC2 = .91 and .88, respectively). For outcome variables, prosocial behaviors showed significant ICC, equaling .09 ($p < .001$). Further, classroom adjustment also showed significant ICC (ICC = .14; $p < .001$)[2].

Conditional models

   Prosocial behaviors. To avoid statistical convergence and specification problems, we introduced our variables as manifest variables and used classroom averages of goal structures in classroom level[3]. Slope, as an outcome model predicting the random intercept and slope of prosocial behaviors, was tested (Table 3). Meanwhile, perceptions of classroom goal structures were assigned as student-level predictors of intercepts, and perceptions of classroom goal structures were also centered at the group mean (Enders & Tofighi, 2007). For classroom level, aggregated classroom goal structures were entered into the model predicting random intercept (β_{0j}) and gender slope (β_{1j}); meanwhile, classroom social goal structures were centered at the grand mean. The final model is presented in the following equations.

   ＜Student-level model＞

$Y_{ij} = \beta_{0j} + \beta_{1j}$ (gender) $+ \beta_{2j}$ (perceived prosocial goal structure) $+ \beta_{3j}$ (perceived compliance goal structure) $+r_{ij}$

   ＜Classroom-level model＞

$\beta_{0j} = \gamma_{00} + \gamma_{01}$ (grade) $+ \gamma_{02}$ (prosocial goal structure) $+ \gamma_{03}$ (compliance goal structure) $+u_{0j}$, $\beta_{1j} = \gamma_{10} + \gamma_{11}$ (prosocial goal structure) $+ \gamma_{12}$ (compliance goal structure) $+ u_{1j}$

   We reported unstandardized coefficients in a similar manner to that shown in past studies (e.g., Murayama & Elliot, 2009), that were interpreted as having an effect on outcome variables when the predictor variables had increased by one unit. For student level, gender was found to negatively relate to prosocial behaviors $\gamma_{10} = -0.49$, $SE = 0.23$, $p < .05$, which suggests that, on average, boys reported lower levels of prosocial behaviors than girls. Further, both perceived prosocial goal structure and perceived compliance goal structure were found to be positive predictors of intercepts, suggesting that children who perceived their classroom as having social goal structures tended to behave prosocially.

   Meanwhile, for classroom-level intercepts, prosocial goal structure was found to be a positive classroom-level predictor of intercepts ($\gamma_{02} = .26$, $SE = 0.08$, $p < .01$), indicating that children tend to behave prosocially in classrooms that have a prosocial goal structure.

   A cross-level interaction was also observed, as the prosocial goal structure was determined to be a positive predictor of the gender slope ($\gamma_{12} = .31$, $SE = 0.10$, $p < .01$). To interpret the interaction in question, a simple slope analysis was conducted. The result here revealed that for classrooms with low prosocial goal structure (-1 SD from the mean), the simple slope was significant ($B = -0.57$, $SE = 0.23$, $p < .05$), suggesting

that girls tend to have higher prosocial behaviors than boys in low prosocial-goal-structure classrooms. However, in classrooms with high prosocial goal structure, this difference was diminished (B = -0.41, SE = 0.23, p < .10). This result is presented in Figure 2.

Classroom adjustment. Classroom adjustment was entered into the model as an outcome variable. The same model used for predicting prosocial behaviors was then tested to explain the variance of intercept and slope. For student-level, perceived prosocial goal structure was found to be relatively strongly positively related to classroom adjustment (γ_{20} = 0.68, SE = 0.04, p < .001); meanwhile, for the classroom-level predictor of intercepts, prosocial goal structure was found to predict the intercept of classroom adjustment positively and strongly (γ_{02} = 0.86, SE = 0.16, p < .001), indicating that in high prosocial-goal-structure classrooms, children tend to have high classroom adjustment.

For the gender slope, compliance goal structure was found to be marginally significant (γ_{13} = -0.30, SE = 0.15, p = .053). Then, to interpret the nature of the interaction, a simple slope analysis was conducted (Figure 3). Consequently, for boys, the simple slope of compliance goal structure was found to be significant, suggesting that boys in high compliance-goal-structure classrooms tend to have lower classroom adjustment than those who are in low compliance-goal-structure classrooms (B = -0.43, SE = 0.14, p < .01); for girls, the simple slope was not significant (B = -0.13, SE = 0.18, ns).

Discussion

Overview of the results

The present study examined the effects of classroom and gender on prosocial behaviors and classroom adjustment. Consistent with the existing literature, our study found a gender difference in regard to prosocial behaviors, albeit with a small effect size, as girls reported higher prosocial behaviors than boys. Meanwhile, gender differences in regard to social outcomes varied across classrooms, and these were moderated by classroom social goal structures. Although a careful discussion is necessary in relation to the unstandardized coefficients, it was determined that the effects of significant classroom-level variables (i.e., goal structures) are not small (i.e., meaningful) because they ranged from γ = .29 to .86 (in absolute value) while the goal structures increased

by one unit.

Interaction between gender and classroom social goal structures

In regard to the results with slope as an outcome model, we found several mismatched effects. First, we identified a mitigation effect in which boys tended to report lower prosocial behaviors than girls in classrooms with low prosocial goal structure, but this gender difference was diminished in classrooms with high prosocial goal structure. This finding suggests that emphasizing prosocial goals may be effective for boys. Boys may have a lower degree of personal prosocial goals than girls when first entering such classes (e.g., Wentzel, 2004), and they can gain an understanding of the value of pursuing such goals when prosocial goals are emphasized and shared in classrooms. Results concerning prosocial goal structure, both in this and other studies, suggest that it is an ideal classroom environment that is effective for every child and teacher (Jennings & Greenberg, 2009); even boys can enjoy its benefits.

Second, we observed the exacerbation effect, as the compliance goal structure was found to deteriorate classroom adjustment, but only for boys. Boys tended to have lower compliance goals than girls (e.g., Wentzel, 1998), and the violation of compliance goals can result in criticism and/or punishment. In this sense, the mismatch between personal and environmental goals results in an additional pressure and can cause boys to perceive the classroom environment as a restrictive atmosphere, which in turn deteriorates classroom adjustment.

We believe that our finding can be generalized to other cultures (i.e., Western) to some extent, as our hypotheses were based on research in classrooms in Western cultures. In such cultures, prosocial or emotional classroom climate is salient for promoting the well-being of children (e.g., Jennings & Greenberg, 2009).

Contributions of the current research and educational implications

The present study makes two prominent contributions to the existing literature. First, our findings help to resolve the current inconsistency in existing literature regarding the effects of gender differences on social outcomes. Further, although past studies have tested several moderators, including study methods (i.e., more gender differences tend to be found in studies employing self-report questionnaires; see Eisenberg & Fabes, 1998), few studies have tested environmental moderators when examining the relationship between gender and social outcomes.

Second, the present study confirmed that the prosocial goal structure is effective for predicting optimal social outcomes. We focused on two different social

outcomes: prosocial behaviors and classroom adjustment. Consequently, we found that prosocial goal structure was positively related to both outcomes. Our findings suggest that in classroom management, emphasis on prosocial goals can lead to fostering beneficial social-behavioral outcomes and well-being in children. Further, prosocial goal structure (i.e., prosocial classroom environments) is considered to be an ideal classroom environment (Jennings & Greenberg, 2009).

These contributions suggest that a focus on environmental variables has educational importance, as our study has shown that teachers can alter children's social behaviors or adjustments through effective classroom management. In particular, as this finding shows that, from the point of view of the social goals emphasized in the classroom, teachers can promote or degrade boys' prosocial behaviors or classroom adjustments, the emphasis of prosocial goals has special importance in regard to social outcomes caused as a result of classroom management.

Our findings also imply that an emphasis on social goals has a different impact on children's social outcomes depending on the gender of a child: boys tend to be more susceptible to classroom social goal structures than girls. Emphasizing classroom prosocial goals may promote the optimal outcome in boys (i.e., prosocial behaviors), whereas compliance goals tend to undermine their classroom adjustment. Meanwhile, teachers may wish to note the gender differences in regard to the effect of social goal structures on social outcomes.

On the other hand, compliance goal structure relates to the minimum standards children should obey. In such environments, it is possible that children seldom receive credit from teachers when they obey the rules. Therefore, some boys, whose goals (i.e., low personal compliance goals vs. classroom compliance goal structure) may be mismatched, can become disappointed and will start to dislike and lose interest in their class.

In summary, for educational practice, we suggest that based on our findings, emphasizing classroom prosocial goals is significant for promoting prosocial behaviors and classroom adjustment. Teachers may wish to create time to develop a prosocial classroom atmosphere in addition to conducting daily academic activities. Setting classroom social goals and taking time to discuss classroom cooperation should be recommended as examples of educational practice. In addition to providing instruction to the classroom, teachers may wish to create individualized instruction taking children's gender into consideration (e.g., do not too much persist on compliance issues especially for boys).

Limitations and future avenues of study

   The findings of the present study should be interpreted in the context of several inherent limitations. First, the present study focused on the relationship between variables rather than predictive effects. It is possible that classroom-level social outcomes (e.g., prosocial behaviors) promote or strengthen the prosocial goal structure; consequently, further studies are required to understand the nature of these possible causal effects. Second, in relation to the person-environment fit, we hypothesized that girls tend to have higher personal social goals (personal goals were not measured), and we tested the cross-level interaction with classroom social goals because our objective was to clarify possible inconsistencies in gender differences and their effect on social outcomes. Future research should address the person-environment fit in terms of social goals by directly measuring personal social goals, which may delineate the possible mechanisms underlying gender × social goal structure interactions. Finally, although we believe that our findings can be generalized to other cultures to some extent, cross-cultural issues need to be accounted for when interpreting these results. Our data and results were derived from a sample of Japanese elementary classrooms. Future studies should confirm the findings of this study in the classroom in other cultures and should closely examine any cultural differences in the effects of classroom social goals.

Footnotes

1. In the light of match and mismatch hypothesis, there may be 3 additional hypotheses which we do not strongly assume: (a) compliance goal structure will promote positive social outcomes for girls (the match hypothesis); (b) prosocial goal structure will promote negative influence on social outcomes for boys (the mismatch hypothesis); (c) compliance goal structure will promote positive influence on boys' social outcomes (the mismatch hypothesis). For the reason not to posit hypothesis (a), compliance goal structure on girls may not necessarily promote our outcome variables (i.e., prosocial behaviors and classroom adjustment), as we control for prosocial goal structure. In other words, our outcome variables would be more closely related to prosocial goal structure than to compliance goal structure. For (b) and (c), they are contradictory to hypothesis (2) and (3) accordingly, and (2) and (3) seem realistic.

2. We also checked the school-level ICCs of our outcome variables and found them to be small (.002 for classroom adjustment, .028 for prosocial behaviors) and non-significant, indicating that school-level effects may be negligible. Further, we tested the school effects by applying three-level nested models in our main analyses described below; however, the models caused specification problems (negative values in error

variance), so we omitted the school-level effects from the subsequent analyses.

3. We also tested the models by applying manifest measurements of predictor variables (i.e., goal structures) at the student level and then latent aggregation of these at the classroom level. The obtained results were equivalent to the results reported below.

Conflicting interests

The authors declare that there are no conflicts of interest.

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Table 1

Descriptive statistics and correlations among variables

	1	2	3	N	Missing rate	ω	Mean	SD	ICC
Prosocial goal structure	—			3360	6.90%	.89	4.09	0.77	.24
Compliance goal structure	.68 (3288)	—		3486	3.41%	.72	4.01	0.70	.19
Prosocial behaviors	.48 (3291)	.39 (3415)	—	3521	2.44%	.82	4.05	0.68	.09
Classroom adjustment	.53 (3316)	.36 (3437)	.42 (3478)	3552	1.58%	.94	3.59	1.07	.14

Note. All correlation coefficients were significant at $p < .001$. Numbers in parentheses represent the sample sizes.

Table 2

Gender differences in regard to social outcomes

|	Girls	Boys	d	
	M (SD)	M (SD)		
Prosocial behaviors	4.16 (0.61)	3.93 (0.72)	0.34	***
Classroom adjustment	3.60 (1.07)	3.60 (1.07)	0.00	

*** $p < .001$

Table 3

Social goal structures as classroom-level predictors of intercepts and slope for social outcomes

	Prosocial behaviors			Classroom adjustment		
	Coefficient	*SE*		*Coefficient*	*SE*	
Intercept (γ_{00})	4.20	0.20	***	3.34	0.39	***
Student-level predictors						
Gender (γ_{10})	-0.49	0.23	*	0.16	0.37	
Perceived prosocial goal structure (γ_{20})	0.32	0.02	***	0.68	0.04	***
Perceived compliance goal structure (γ_{30})	0.16	0.02	***	0.05	0.04	
Classroom-level predictors of intercept						
Grade (γ_{01})	-0.01	0.04		0.05	0.07	
Prosocial goal structure (γ_{02})	0.26	0.08	**	0.86	0.16	***
Compliance goal strcuture (γ_{03})	0.13	0.10		-0.13	0.22	
Classroom-level predictors of slope						
Grade (γ_{11})	0.05	0.04		0.03	0.07	
Prosocial goal structure (γ_{12})	0.31	0.10	**	0.23	0.15	
Compliance goal strcuture (γ_{13})	-0.21	0.14		-0.30	0.15	†
Random effects	*Variance*	*SE*		*Variance*	*SE*	
Intercept (u_{0j})	0.012	0.003	**	0.062	0.013	***
Gender (u_{1j})	0.010	0.006	†	0.010	0.011	

*** $p < .001$, ** $p < .01$, * $p < .05$, † $p < .10$
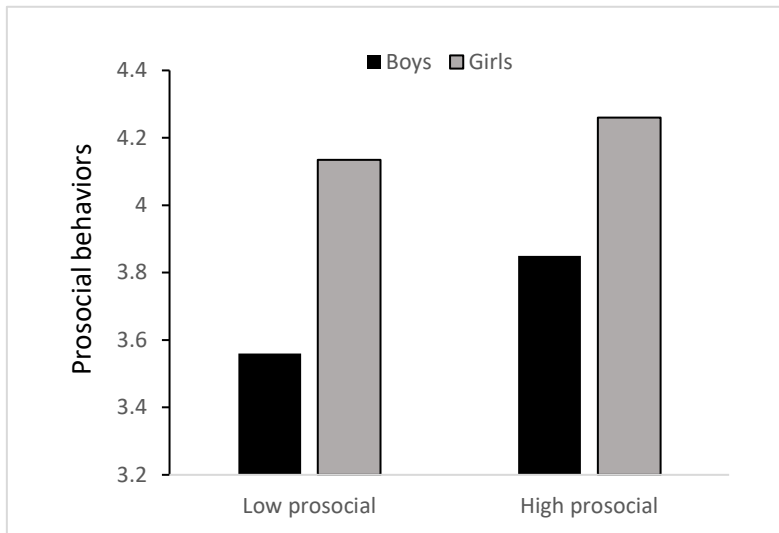
Prosocial goal structure

Figure 1. Prosocial behaviors as a function of prosocial goal structure and gender.
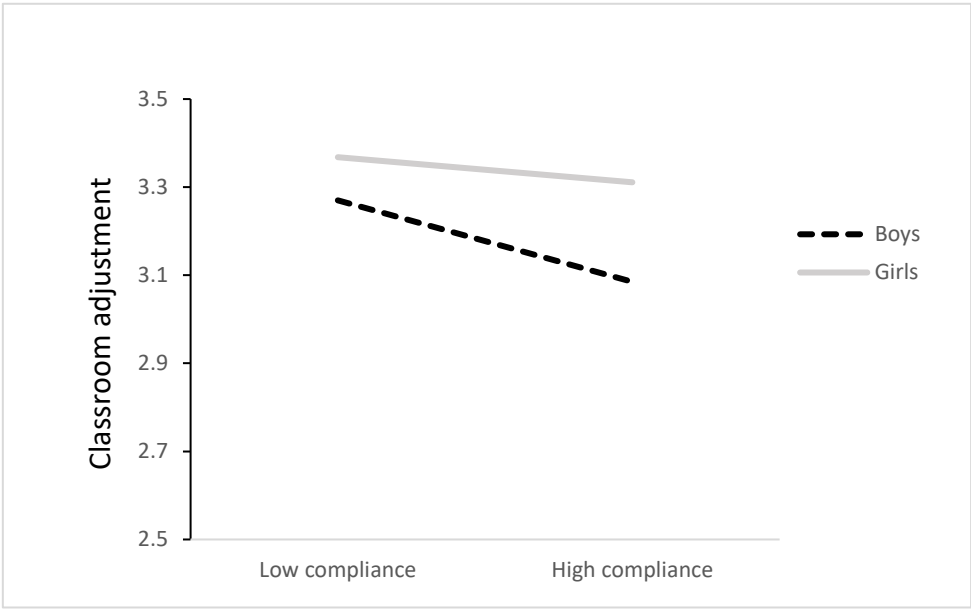
Compliance goal structure

Figure 2. Classroom adjustment as a function of compliance goal structure and gender.