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Autonomy-Supportive Classroom Climate and Attitudes Towards Social Participation: A Practice in Mixed-Grade Classes in a Japanese Elementary School

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Abstract

This study focuses on the relationship between an autonomy-supportive classroom climate and changes in attitudes towards social participation in mixed-grade classes. The research field involved the learning activities conducted in a Japanese elementary school. Learning activities were carried out in mixed-grade classes, and the children engaged in problem solving with their peers from different grades in collaboration with the local community. It was hypothesized that a perceived autonomy-supportive classroom climate would affect attitudes towards social participation and that this effect would be mediated by intrinsic motivation and reflection. Participants were 163 third- and fourth-grade children from mixed-grade classes. Data were collected repeatedly over a three-year period through a questionnaire survey. Latent growth curve modeling analyses revealed that an autonomy-supportive classroom climate was related to intrinsic motivation, which in turn, was related to reflection. Additionally, intrinsic motivation and reflection predicted the initial level of attitudes towards social participation. Intrinsic motivation was negatively related to the extent of change in attitudes towards social participation. These results suggest that an autonomy-supportive classroom climate promotes children's positive attitudes towards social participation. In mixed-grade classes, teachers must create classrooms in which children can support each other's autonomy.

Keywords: autonomy-supportive classroom climate, attitudes towards social participation, reflection, mixed-grade classes, elementary school children

1. Introduction

1.1 Autonomy-Supportive Climate in Mixed-Grade Classes

Elementary school children spend time not only in same-grade classrooms, but also in mixed-grade classrooms. Although most subjects and learning activities are conducted in same-grade classes, each elementary school sets some learning activities conducted in mixed-grade classes for educational gain. Interaction with peers of different ages can provide children with opportunities to develop skills and abilities.

Autonomy support is a useful theoretical framework for understanding mixed-grade classroom climates. Early experimental studies revealed a variety of factors that affect changes in intrinsic motivation (Ryan & Deci, 2017). Autonomy support is conceptualized to comprehensively explain the environmental factors that influence intrinsic motivation in cognitive evaluation theory (Deci & Ryan, 1985). Deci and Ryan (1987) define autonomy support as encouraging people to make their own choices. Previous studies have primarily focused on effects of teacher autonomy support. Black and Deci (2000) state that autonomy support means that an individual in a position of authority (e.g., a teacher) takes the other's (e.g., student's) perspective, acknowledges the other's feelings, and provides the other with pertinent information and opportunities for choice, while minimizing the use of pressures and demands. Previous research has found that students who perceive their teachers as more autonomy-supportive report higher levels of intrinsic motivation, school well-being, and academic performance (Howard et al., 2024; Okada, 2018).

In addition to teachers' instructions to support students' autonomy, an autonomy-supportive classroom climate is important for motivating children. Motivation theories have shown that classroom climate affects students' motivation and achievement (e.g., Slavin, 1996; Urdan & Schoenfelder, 2006; Wang et al., 2020). Therefore,

educators are focusing on creating motivating classroom climates. Classroom climate is shaped not only by teachers' instruction but also by peers and classmates. Previous studies have examined the effects of autonomy support provided by peers and friends (Beiswenger & Grolnick, 2010; Guay et al., 2016). Children can support each other's motivation through autonomy support. Furthermore, classroom research has shown that support from classmates and the quality of relationships among peers in the classroom significantly contribute to shaping the classroom climate (e.g., Patrick et al., 2007; Wang & Degol, 2016). Taken together, these studies suggest that an autonomy-supportive classroom climate shaped by relationships and interactions with peers affects students' motivation and achievement.

In mixed-grade classrooms, an autonomy-supportive climates influence student motivation. Okada (2021) examined the effects of an autonomy-supportive classroom climate on children's motivation in a sample of elementary school students in mixed-grade classes. Path analyses revealed that a perceived autonomy-supportive classroom climate affected the perceived active participation structure, which was related to intrinsic motivation. In addition, these relationships did not differ by grade level. Although previous studies have reported inconsistent effects of mixed-grade classes on learning (Miller, 1990; Veenman, 1995), Okada's (2021) findings suggest that educational effects may depend on the classroom climate in which students support each other's autonomy.

1.2 Autonomy-Supportive Climate and Attitudes towards Social Participation

Intrinsic motivation can lead to various academic outcomes. Previous research has suggested that intrinsic motivation is related to academic performance, well-being, and persistence (e.g., Cerasoli et al., 2014; Howard et al., 2021). It was predicted that intrinsic motivation would have positive effects on some academic outcomes also in mixed-grade classes. This study focused on children's attitudes towards social participation.

Nurturing children's attitude towards social participation is an important educational goal in elementary schools. During elementary school, children gradually develop an interest in the society around them and gain self-confidence in contributing to the community. Social studies primarily plays a role in the school curriculum. Additionally, several learning activities are conducted in collaboration with the local communities. A typical example is service-learning. Service-learning is a teaching and learning strategy that attempts to integrate community services into an academic curriculum (Celio et al., 2011). Meta-analyses have revealed that service-learning has positive effects not only on self and academic achievement, but also on civic engagement and citizenship (Celio et al., 2011; Conway et al., 2009).

Learning activities in which children collaborate with people in the local community influence their attitudes towards social participation. This effect is predicted to depend on the classroom climate, which provides the basis for peer interaction. In mixed-grade classes, children collaboratively study with students at different developmental stages. Although these interactions can have advantages, they can be challenging for children. If a classroom has an autonomy-supportive climate, learning activities in mixed-grade classes can promote children's attitudes towards social participation by increasing their intrinsic motivation.

1.3 Reflection and Attitudes Towards Social Participation

Reflection also plays a significant role in the process by which an autonomy-supportive classroom climate promotes positive attitudes towards social participation. In the literature, student reflection has been assumed to be a plausible mechanism for determining the effects of service-learning (Bringle & Hatcher, 1999; Conway et al., 2009). Reflection is the intentional consideration of an experience in light of particular learning objectives (Bringle & Hatcher, 1999). Children reflect on the experiences they share with their peers in the classroom, and each child integrates this reflection into themselves. As a result, they develop positive attitudes towards social participation.

Children can reflect on their experiences in autonomy-supportive classrooms. In service-learning practices, it has been suggested that creating a classroom climate of trust and respect is an essential element in fostering reflective practice among students (Bringle & Hatcher, 1999). An autonomy-supportive classroom climate is expected to promote children's reflection in mixed-grade classes. Children can reflect on their experiences of interacting with the local community in classrooms that support autonomous thinking and expression across grade levels; these learning experiences foster their attitudes towards social participation.

Okada (2022) examined the role of reflection in the relationship between an autonomy-supportive classroom climate and attitudes towards social participation, targeting an educational practice of mixed-grade classes in an elementary school. In educational practices, children collaborated with peers from different grades to participate in community activities. Learning activities were conducted throughout the year and included repeated activities in the community and discussions within mixed-grade classes (Okada, 2020). In the study, attitudes towards social participation were captured in terms of interest in the local community and self-confidence in contributing to the

community. Path analysis using cross-sectional data revealed that a perceived autonomy-supportive classroom climate was related to higher levels of reflection, which in turn, increased interest in the local community and self-confidence in contributing to the community. These results suggest that an autonomy-supportive classroom climate can promote the development of attitudes towards social participation through reflection in mixed-grade classes.

1.4 The Present Research

This study focuses on the relationship between an autonomy-supportive classroom climate and changes in attitudes towards social participation in the mixed-grade classes. The research field involved the learning activities conducted in a Japanese elementary school. Learning activities were carried out in mixed-grade classes, and the children engaged in problem solving with their peers from different grades in collaboration with the local community. This study aims to extend Okada's (2022) findings on the following two points: First, it examined the role of intrinsic motivation in the development of attitudes towards social participation. As discussed above, an autonomy-supportive classroom climate is conceptualized as the integration of various factors that influence intrinsic motivation (Deci & Ryan, 1987; Ryan & Deci, 2017). Therefore, the effect of an autonomy-supportive classroom climate is predicted to be mediated by children's intrinsic motivation for learning activities. Given that intrinsic motivation promotes positive cognitive engagement (e.g., Howard et al., 2021; Walker et al., 2006), an autonomy-supportive classroom climate would increase intrinsic motivation, which in turn, would promote reflection on learning activities.

Second, this study tracked the changes in attitudes towards social participation. Attitudes towards social participation are expected to develop during the elementary school years. Although Okada's (2022) study revealed the effect of reflection on children's attitudes towards social participation, it was limited to cross-sectional relationships. This study examines the longitudinal effects of reflection.

The hypotheses were as follows:

Hypothesis 1: An autonomy-supportive classroom climate is related to intrinsic motivation, which in turn, is related to reflection.

Hypothesis 2: Intrinsic motivation and reflection predict initial levels of attitudes towards social participation.

In addition, this study examines how intrinsic motivation and reflection predict changes in attitudes towards social participation.

2. Method

2.1 Participants and Field

Participants were third- and fourth-grade Japanese children attending an elementary school attached to a university. This study focused on learning activities conducted in mixed-grade classes at the participating school. The activities were conducted in mixed-grade classes consisting of approximately 35 students, with five-seven students each from the first to sixth grades. The activities were carried out continuously throughout the year at a pace of three times (45 minutes each) per week. The children worked on problem-solving tasks called "projects" in classes, and went out into the local community to carry out activities with support from municipalities, local companies, local news organization, university club, among others. Children worked with various people in their areas to solve problems. Throughout the year, the children discussed the purpose and content of the project, and conducted their own activities with the support of their teachers.

In total, 193 children began participating in 2022. They answered the questionnaires three times during three school years: February 2022 (T1), February 2023 (T2), and February 2024 (T3). The Japanese school year begins in April and ends in March. The survey was conducted at the end of each school year. Although third- to sixth-grade children participated in the questionnaire survey every year, this study focused on data from third- and fourth-graders to track their changes over a three-year period. The data of 30 children were removed as they were unable to complete the questionnaire three times because of changing schools. Thus, data from 163 children (85 third graders and 78 fourth graders) were analyzed.

2.2 Measures

2.2.1 Perceived Autonomy-Supportive Classroom Climate

Okada's (2021) five items measuring perceived autonomy-supportive classroom climate were used (e.g., "Everyone tries to listen to the opinions of each student in this class" and "Everyone accepts their classmates' own way of thinking and behaving"). Participants were asked to rate each item on a 4-point Likert scale: 1 (not true), 2 (rarely true), 3 (sometimes true), and 4 (true). The scale was only administered at T1. The scale score was

calculated by averaging the scores of the five items. To assess the relatability, the estimated reliability coefficient (McDonald's ω) was calculated. This value was .81, suggesting good reliability.

2.2.2 Intrinsic Motivation

Okada's (2021) Intrinsic Motivation Scale was used to assess children's intrinsic motivation for the activities focused on in this study. This scale consists of six items covering various features of intrinsic motivation (Harter, 1981). Sample items are "It is fun to participate in activities" and "I want to take on difficult challenges." Participants were asked to rate each item on a 4-point Likert scale: 1 (not true), 2 (rarely true), 3 (sometimes true), and 4 (true). The scale was only administered at T1. The scale score was calculated by averaging the scores of the six items. The estimated reliability coefficient (McDonald's ω) was .89, suggesting good reliability.

2.2.3 Reflection

Three items from Okada (2022) were used to assess children's reflections on their experiences of the learning activities. The items are "Through talking with people outside of school, I learned something that I thought was important to me," "My way of thinking expanded through talking with people outside of school," and "I thought about my future by meeting people outside of school." Participants were asked to rate each item on a 4-point Likert scale: 1 (not true), 2 (rarely true), 3 (sometimes true), and 4 (true). The scale was only administered at T1. The scale score was calculated by averaging the scores of the three items. The estimated reliability coefficient (McDonald's ω) was .79, suggesting good reliability.

2.2.4 Attitudes Towards Social Participation

Okada's (2022) items measuring attitudes towards social participation were used. This scale consists of two subscales: interest in the local community (three items; e.g., "I'm interested in what happens in my community and society") and self-confidence in contributing to the community (three items; e.g., "I believe that by working hard, I can improve the community and society"). Hereafter, they are referred to as "interest" and "self-confidence." Participants rated these items three times. The scale score for each measurement was calculated by averaging the three-item scores. The estimated reliability coefficient (McDonald's ω) ranged from .75 to .82 for interest and from .87 to .90 for self-confidence. These values indicated good reliability.

2.3 Ethical Considerations

The participating school conducted a questionnaire survey of the children every year to evaluate their curriculum achievement. This study used data from a questionnaire survey conducted between 2022 and 2024. The participating school was an elementary school attached to a university, and parents provided consent for their children to participate in the research. The children were informed (both through written documents and orally) that their participation was voluntary and would not have any impact on their academic records. Participants were asked to write their names on the questionnaires to match the data collected on the three occasions. All analyses were performed after the responses were anonymized.

2.4 Analytic Procedures

Latent growth curve modeling (Preacher et al., 2008) was used to examine the relationships between the study variables described in the hypotheses. First, a model in which the attitudes towards social participation changed over time was tested. Two latent variables, intercept and slope, were assumed for the scale scores on the three occasions. The slope was assumed to be linear, that is, 0, 1, and 2 were assigned to each time point. The mean and variance of the intercept and slope were estimated using this model. Next, the effects of the study variables on the intercept and slope of attitudes towards social participation were examined. The hypothetical model is illustrated in Figure 1. It was predicted that a perceived autonomy-supportive classroom climate would be related to intrinsic motivation, which in turn, would be related to reflection. Intrinsic motivation and reflection were hypothesized to predict the intercept and slope of attitudes towards social participation. The parameters were estimated using the maximum likelihood method. The models were separately fitted for interest and self-confidence. All analyses were performed using R version 4.3.3 and the lavaan package for structural equation modeling.

3. Results

3.1 Descriptive Statistics and Correlations among Variables

Descriptive statistics and Pearson's correlation coefficients for the study variables are presented in Table 1. The means of interest did not vary by occasion (F (2, 324) = 0.55, p = .58, η^2 = .003). In contrast, the means of self-confidence varied by occasion (F (2, 324) = 3.32, p = .04, η^2 = .02). The score for T3 was higher than that for T2 (d = 0.21). A perceived autonomy-supportive classroom climate was positively correlated with intrinsic motivation (r = .61, p < .001) and reflection (r = .54, p < .001). Intrinsic motivation was positively correlated with

reflection (r = .65, p < .001). Perceived autonomy-supportive classroom climate, intrinsic motivation, and reflection were positively correlated with interest and self-confidence on all three occasions, except for the relationship between perceived autonomy-supportive classroom climate and self-confidence at T3 (r = .15, p = .0504).

Table 1. Descriptive statistics and correlations among the study variables (N = 163)

	1	2	3	4	5	6	7	8	*Mean*	*SD*
1. Autonomy support									3.17	0.65
2. Intrinsic motivation	.61***								3.46	0.67
3. Reflection	.54***	.65***							3.14	0.84
4. Interest (T1)	.46***	.62***	.64***						3.24	0.74
5. Interest (T2)	.22**	.34***	.28***	.34***					3.21	0.67
6. Interest (T3)	.19*	.28***	.41***	.28***	.51***				3.27	0.71
7. Self-confidence (T1)	.47***	.62***	.73***	.73***	.39***	.43***			2.93	0.84
8. Self-confidence (T2)	.22**	.38***	.38***	.31***	.63***	.50***	.45***		2.83	0.89
9. Self-confidence (T3)	.15	.30***	.42***	.26***	.53***	.81***	.44***	.55***	3.01	0.83

Note. Autonomy support = perceived autonomy-supportive classroom climate; Interest = interest in the local community; Self-confidence = self-confidence in contributing to the community. *p < .05, **p < .01, ***p < .001.

3.2 Examination of the Hypothetical Model

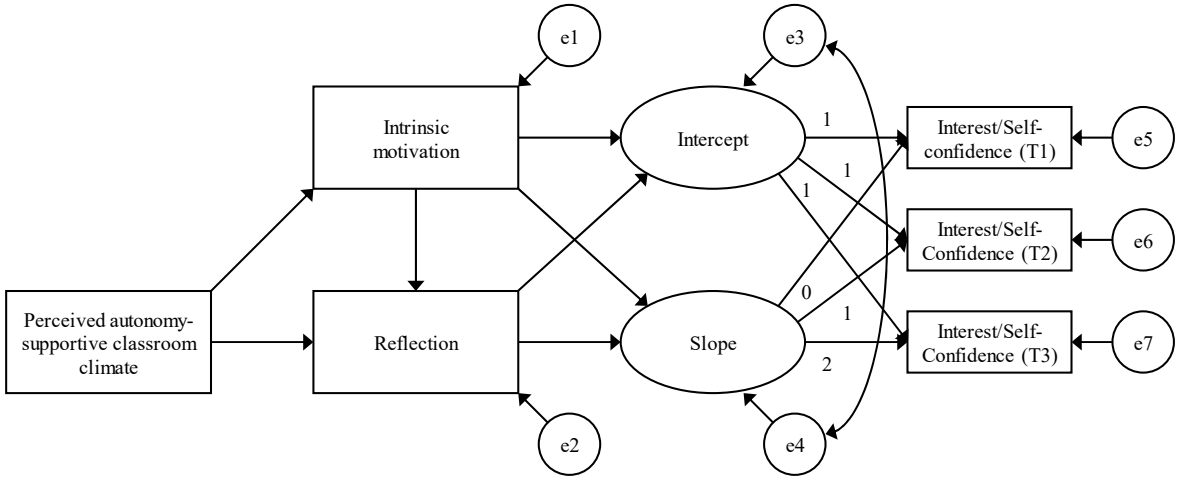
The intercept and slope of attitudes towards social participation were estimated using latent growth curve modeling. First, models in which attitudes towards social participation changed over time were tested. The model showed a good fit for interest (χ^2 (1) = 1.09 (p = .30), CFI = 1.00, TLI = 1.00, RMSEA = 0.02, SRMR = 0.02). The fit indices of the model for self-confidence were χ^2 (1) = 5.57 (p = .02), CFI = 0.96, TLI = 0.87, RMSEA = 0.17, SRMR = 0.04. Although chi-square statistic was significant and TLI and RMSEA showed a somewhat poor fit, the other indices reached an acceptable level. Table 2 presents the estimates. The means of intercept were 3.22 (95%CI [3.12, 3.32]) for interest and 2.89 (95%CI [2.76, 3.02]) for self-confidence. These values indicate the initial variable levels. Regarding the slope, the means were 0.02 (95%CI [−0.05, 0.09]) for interest and 0.05 (95%CI [−0.02, 0.12]) for self-confidence, suggesting that attitudes towards social participation did not change over time in average.

Table 2. Estimates of intercept and slope in the latent growth curve models

	Intercept		Slope	
	Mean	*Variance*	*Mean*	*Variance*
Interest in the local community	3.22***	0.19**	0.02	0.06
	(0.05)	(0.07)	(0.03)	(0.04)
Self-confidence in contributing to the community	2.89***	0.36**	0.05	0.06
	(0.06)	(0.10)	(0.04)	(0.05)

Note. **p < .01, ***p < .001.

The hypothetical model was tested, as shown in Figure 1. Table 3 presents the results of the study. Regarding interest, the fit indices reached an acceptable level as a whole (χ^2 (6) = 18.87 (p = .004), CFI = 0.96, TLI = 0.91, RMSEA = 0.12, SRMR = 0.08) although chi-square statistic was significant. A perceived autonomy-supportive classroom climate was positively related to intrinsic motivation (B = 0.63, p < .001) and reflection (B = 0.30, p = .001). Intrinsic motivation was positively related to reflection (B = 0.63, p < .001). Regarding the parameters of interest, intrinsic motivation (B = 0.40, p < .001) and reflection (B = 0.29, p < .001) were positively related to the intercept. Intrinsic motivation was also negatively related to the slope (B = −0.19, p = .004).



Note. Interest = interest in the local community; Self-confidence = self-confidence in contributing to the community.

Figure 1. Hypothetical model

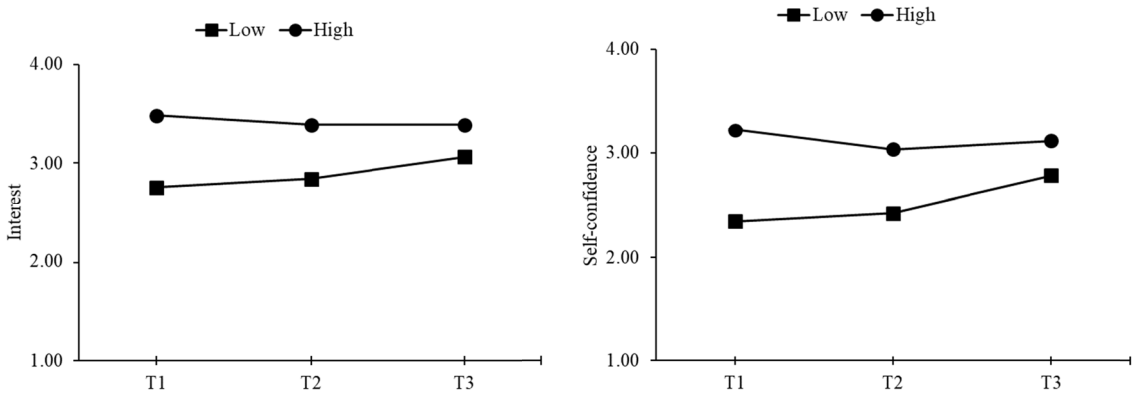
Table 3. The results of the latent growth curve models

	Intrinsic motivation	Reflection	Interest		Self-confidence	
			Intercept	Slope	Intercept	Slope
Autonomy support	0.63^{***} [0.50, 0.76]	0.30^{**} [0.12, 0.49]	—	—	—	—
Intrinsic motivation		0.63^{***} [0.45, 0.81]	0.40^{***} [0.25, 0.55]	-0.19^{**} [−0.31, −0.62]	0.34^{***} [0.18, 0.50]	-0.14^{*} [−0.26, −0.01]
Reflection			0.29^{***} [0.16, 0.42]	0.01 [−0.09, 0.12]	0.52^{***} [0.39, 0.65]	−0.08 [−0.18, 0.03]

Note. These values represent unstandardized path coefficients. Values in brackets indicate 95%CI. Autonomy support = perceived autonomy-supportive classroom climate; Interest = interest in the local community; Self-confidence = self-confidence in contributing to the community. $^{*}p < .05$, $^{**}p < .01$, $^{***}p < .001$.

Regarding self-confidence, the fit indices reached an acceptable level as a whole (χ^2 (6) = 15.25 (p = .02), CFI = 0.98, TLI = 0.94, RMSEA = 0.10, SRMR = 0.06) although chi-square statistic was significant. The relationships among perceived autonomy-supportive classroom climate, intrinsic motivation, and reflection were the same as in the model of interest. Regarding the self-confidence parameters, intrinsic motivation (B = 0.34, p < .001) and reflection (B = 0.52, p < .001) were positively related to the intercept. Intrinsic motivation was also negatively related to the slope (B = −0.14, p = .03).

To clarify the effects of intrinsic motivation on attitudes towards social participation, the mean scores of the groups with low (below average) and high (above average) intrinsic motivation were plotted (Figure 2). Change trends were common for both subscales. Children with high intrinsic motivation reported higher levels of interest and self-confidence at T1. However, the differences between children with high and low intrinsic motivation decreased, and the group with low intrinsic motivation caught up with the group with high intrinsic motivation.



(a) interest in the local community (b) self-confidence in contributing to the community

Figure 2. The mean scores of interest in the local community and self-confidence in contributing to the community in low and high intrinsic motivation groups

4. Discussion

4.1 The Effects of Autonomy-Supportive Classroom Climates on Changes in Attitudes Towards Social Participation

This study examined the effects of an autonomy-supportive classroom climate on changes in attitudes towards social participation in mixed-grade classes. It was predicted that a perceived autonomy-supportive classroom climate would affect changes in attitudes towards social participation, and that these effects would be mediated by intrinsic motivation and reflection. To test this prediction, the present study analyzed three years of repeated data.

First, perceived autonomy-supportive classroom climate was related to intrinsic motivation, which in turn, was related to reflection. This result supports Hypothesis 1. Previous studies have addressed the effects of an autonomy-supportive classroom climate on students' intrinsic motivation and learning behaviors (Beiswenger & Grolnick, 2010; Guay et al., 2016; Okada, 2021). Okada (2022) found that perceived autonomy-supportive classroom climates were related to reflection after collaborating with people in local society. The present findings suggest that intrinsic motivation can serve as a mediator between a perceived autonomy-supportive classroom climate and reflection. In other words, children can be intrinsically motivated to learn activities in autonomy-supportive classroom, and their intrinsic motivation fosters active reflection on their activities.

Second, reflection was related to attitudes towards social participation at baseline. This suggests that the more children reflected on their experiences in the classes, the more they became interested in the local community and the more self-confident they were in contributing to the community. Therefore, Hypothesis 2 is supported. These results replicate previous findings (Bringle & Hatcher, 1999; Conway et al., 2009; Okada, 2022) and highlight the importance of reflection after engaging in learning activities in collaboration with the local community. In the literature on service-learning, the importance of reflection has been repeatedly emphasized as a determinant of academic outcomes (e.g., Bringle & Hatcher, 1999; Eyler, 2002). Reflection plays an important role in promoting children's positive attitudes towards social participation.

Caution must be exercised when interpreting the effects of intrinsic motivation on changes in attitudes towards social participation. Intrinsic motivation was positively related to initial levels of attitude. Children who were intrinsically motivated by learning activities were more interested in the local community and expressed self-confidence in their contribution to it. This finding is consistent with previous researches highlighting the advantages of intrinsic motivation (e.g., Howard et al., 2021; Walker et al., 2006). However, intrinsic motivation was negatively related to changes in attitudes towards social participation. This does not suggest that intrinsically motivated children became less interested and self-confident over time. As depicted in Figure 2, children with low intrinsic motivation at T1 (i.e., third- and fourth grade) showed an increase in positive attitudes towards social participation as they progressed from fourth to sixth grade. It is possible that the intrinsically motivated children already had high levels of interest and self-confidence at T1; therefore, there was little room for improvement.

4.2 Practical Implications

The main implication of this research on educational practice is the creation of an autonomy-supportive classroom climate as a basis for learning activities in which children collaborate with the local community. How children

reflect on their own experiences in learning activities is the key to determining their educational outcomes. Teachers must create classrooms in which children can support each other's autonomous thinking and actions. They can convey the importance of autonomy-supportive communication to children and model autonomy-supportive communication. Motivational research has focused on how teachers support children's autonomy (Reeve et al., 2022). Teachers' own autonomy-supportive communication styles serve as good models for children to communicate with their classmates in mixed-grade classes.

The present findings also highlight the benefits of mixed-grade classes in nurturing children's attitudes towards social participation. Previous research has revealed the effects of peer modeling (Schunk, 2001). Children can serve as models for their classmates in the classroom and learn from their classmates' behaviors. In mixed-grade classes, children can observe and be influenced by peers from different grades (Okada, 2020). In another literature, Vygotsky's view has emphasized peer interaction in cross-age groups (Blake & Pope, 2008). Children can approach the zone of proximal development by interacting with their older peers. On the other hand, older children learn by helping and supporting younger peers, because it can be a challenge for them to interact with their younger peers. The present findings suggest that it is beneficial to organize mixed-grade classes so that children can collaborate with people in the local community during learning activities.

It is noteworthy that intrinsic motivation did not promote subsequent increases in attitudes towards social participation. Although intrinsic motivation fosters interest in the local community and self-confidence in contributing to the community in the short term, its effect may be short-lived. Teachers should regularly focus on promoting children's intrinsic motivation. To achieve this, each school year requires an autonomy-supportive classroom climate. The importance of classroom climate is recognized not only in the middle grades, but also in upper grades.

4.3 Limitations

This study had two main limitations. First, the data used were limited to quantitative data obtained from questionnaire surveys. It is unclear how children interact with their peers and how they reflect on their experiences. Qualitative data measured through classroom observations or interviews are required to reveal the specific ways in which students think and interact during classes.

Second, this study focused on changes in attitudes towards social participation from the middle to upper grades. Therefore, changes over the six years of elementary school were not examined. The learning activities focused on in this study were conducted in mixed-grade classes from the first to sixth grades. Lower-grade children (i.e., first and second graders) are expected to develop attitudes towards social participation through the influence of their peers. Future research should focus on lower-grade children and examine changes in attitudes towards social participation during the elementary school years.

5. Conclusions

This study focused on learning activities in which children collaborated with people in the local community. The learning activities were conducted in mixed-grade classes. An autonomy-supportive classroom climate influenced attitudes towards social participation, and this effect was mediated by intrinsic motivation and reflection. Therefore, it can be concluded that an autonomy-supportive classroom climate fosters children's positive attitudes towards social participation. To obtain educational gains in the practice of mixed-grade classes, teacher must create classrooms in which children support their peers' autonomous thinking and actions. The classroom can serve as a basis for reflecting on the experiences that children gain through interactions with people in the local community.

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Obtained.

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Data sharing statement

No additional data are available.

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