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Study on successful experiences of elementary school students in physical education classes in Japan

Masanori Kaji1* and Yuta Ono1

Abstract: This study seeks to clarify the structure and characteristics of learners’ successful experiences in elementary school physical education classes in Japan according to grade and sex. A questionnaire survey was administered to 1450 public elementary school students across Japan. An exploratory factor analysis revealed that successful experiences were composed of five factors: improvement in motor skills, victory, the success of others, the success of oneself, and strengthening of bonds. The scale for successful experiences was confirmed to possess internal consistency and some degree of validity. Furthermore, girls scored significantly higher in “the success of others” than boys did. Thus, for learners to have various successful experiences, it is necessary to master motor skills while interacting with others. Additionally, using the developed scale before and after the implementation of the study unit is expected to reveal multifaceted learning outcomes. These efforts will motivate learners to participate in physical education classes.

Subjects: Physical Education Studies; Physical Education; Primary Physical Education; Sport Education; School Psychology

Keywords: course of study; active learning; scale development; physical education; students

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PUBLIC INTEREST STATEMENT

The new course of study for elementary schools, implemented full scale in Japan in 2020, is designed to realize high-quality learning and develop learners who will continue active learning throughout their lives. In this context, learners’ “successful experience” was presented as one of the important points in the latest revision of the PE curriculum. For the first time, the phrase “successful experience” was explicitly stated in the “Explanation of the course of study for elementary schools: PE edition.” However, what exactly is a successful experience? Unfortunately, the “Explanation of the course of study for elementary schools: PE edition” has not explored this concept adequately. In this sense, visualizing the reality of a successful experience for learners allows us to examine PE classes from their perspective more closely and to gain insight into future practical research.
1. Introduction

The new course of study for elementary schools, implemented full scale in Japan in 2020, is designed to realize high-quality learning and develop learners who will continue active learning throughout their lives (Ministry of Education, Culture, Sports, Science and Technology, 2018a). The course seeks to enhance learners’ learning under the slogan of “proactive, interactive and authentic learning” (Ministry of Education, Culture, Sports, Science and Technology, 2018a, p. 22). Therefore, emphasis is placed on the perspective/concept of each subject.

The perspective/concept of physical education (PE) is defined as an effort “to focus on the value and characteristics of physical exercises and sports and view them from their role in enhancing physical strength, as well as pleasure and joy, to relate them to various ways of doing, seeing, supporting, and knowing things according to their aptitude” (The Ministry of Education, Culture, Sports, Science and Technology, 2018b). In other words, PE in Japan will promote learning for the discovery and solution of various tasks through diverse ways of interacting with physical exercises and sports. In this sense, it is becoming increasingly important to explore how learners’ learning occurs in future PE.

In this context, learners’ “successful experience” was presented as one of the important points in the latest revision of the PE curriculum. For the first time, the phrase “successful experience” was explicitly stated in the “Explanation of the course of study for elementary schools: PE edition.” Through successful experience, learners are expected to have fun through physical exercise with relaxed tasks, rules, places, and equipment to facilitate their experience of success (Ministry of Education, Culture, Sports, Science and Technology, 2018b). Thus, ensuring learners’ successful experiences in physical education is an urgent issue in making it fun for learners.

Unfortunately, the “Explanation of the course of study for elementary schools: PE edition” has not explored the concept of a successful experience adequately. Accordingly, we reviewed previous studies on various successful experiences in the pedagogy of PE in Japan. They have not focused on successful experiences, and the concept has not been fully explored in research.

Meanwhile, achievement goal theory posits that individuals interpret the subjective meaning of success in two main ways that correspond to two primary achievement goals—mastery and performance goals (Ames & Archer, 1987, 1988). Mastery goals identify improvement, progress, and proficiency as successes, while performance goals identify good grades and outperforming others as successes (Pintrich & Shunk, 2002).

Additionally, research on achievement motivation has examined goals other than mastery and performance goals. Wentzel (1989) pointed out that in actual classrooms, in addition to academic goals, there are social goals that are related to interpersonal relationships such as getting along with friends, and social behavior such as observing class norms. Research has shown that students’ social goals have a positive impact on academic performance (Wentzel, 1989) and are related to the lessons they receive from teachers and other students (Wentzel, 1994). Later, a trichotomous framework was proposed by Elliot et al. (2011), and the problem of the number of goals was solved (Ford & Nichols, 1991). From these studies of achievement goal theory, it has been inferred that the content of successful experiences includes improvement in ability, gaining recognition from others, and social goals.

Moreover, learners likely experience diverse types of success in PE classes—as described below—because these classes, where motor learning is the focus of study, provide many opportunities to experience being able to do something and gain praise from others. It is easier to have an experience powerful enough to compel them to yell, “I made it,” compared to other subjects.

In research on the pedagogy of PE in Japan, particularly on the development of instructional programs, attempts have been made to impart a taste of success in learners, even if there was no explicit mention of “successful experience.” For example, Kaji et al. (2018) tested the effectiveness
of a program designed to improve sprinting speed for elementary school students and found that it did improve their skills. Similarly, Nakanishi et al. (2019) tested the effectiveness of a program designed for elementary school students to master the spring motion, finding that approximately 80% of learners mastered it.

Several practical studies have been developed to improve learners’ motor skills. Meanwhile, the mechanism of success experience has not been clarified. Furthermore, it has not been clarified whether learners in Japanese physical education classes experience success as defined in the achievement goal theory. Visualizing successful experiences for learners allows us to examine PE classes from their perspective more closely, and gain insight into future practical research.

The purpose of this study is to clarify the successful experiences of Japanese elementary school students in physical education classes through the development of a successful experience scale. Furthermore, the study clarifies the characteristics of successful experience in physical education classes according to the different grades and sex of elementary school students.

2. Material and methods

2.1. Pilot study

In this study, a preliminary survey was conducted to collect written responses on “learners’ experience of success in elementary school PE classes.” The survey was conducted from January to February 2018 among fifth and sixth graders in nine public elementary schools in Tokyo, Kanagawa, and Saitama prefectures in Japan. A total of 871 students (425 boys, 441 girls), including 464 fifth grade students (age 11) and 407 sixth grade students (age 12), took part in this survey. The survey was administered in groups during the class hour for each classroom.

To conduct this survey, we first received permission from the school principals and class teachers. We then distributed consent forms to parents requesting their children’s participation in the survey. Parents could submit a separate consent withdrawal form to class teachers if they did not consent to their child’s participation.

The forms clearly indicated that the anonymity of the participants’ answers in the questionnaire was guaranteed. We obtained consent for the survey by explicitly stating that all questions were voluntary, and that no student was required to answer any question that he or she could not or did not wish to answer.

The survey was administered in the form of a free-response question: “Have you ever had an experience so powerful as to compel you to yell ‘I did it!’ with all your heart in PE classes?”

After the pilot study, we first excluded any answers that were unrelated to the question and then extracted statements at the clause level. In total, we collected 428 statements on learners’ experience of success in elementary school PE classes.

Subsequently, these statements were classified according to their similarity by two investigators involved in this study and a graduate student specializing in PE studies. Discussions were repeated until a unanimous consensus was reached. As a result, five constructs for “learners’ experience of success in elementary school PE classes” were found, including improvement in motor skills, victory, the success of others, the success of oneself, and strengthening of bonds.

We created the scale items based on the content of the statements that we had categorized into the abovementioned constructs. While doing so, we tried to clarify the statements, for example, by aggregating those with similar content. We reviewed the items created through this process with the cooperation of eight current elementary school teachers and revised the statements so that they were easy for the students to understand.
Next, we verified the validity of the content by presenting eight graduate students specializing in PE studies with a list of 18 items related to learners’ experience of success in elementary school PE classes. We asked them to categorize the items according to the abovementioned five constructs. We determined validity according to the rate of agreement and deleted any items that had a rate less than 70%.

Following this verification, we finally selected 17 items for measuring learners’ experience of success in elementary school PE classes. We asked current elementary school teachers to revise the wording of the items so that they would be easily understood by elementary school students.

This pilot survey was conducted with the approval of the ethics committee of the authors’ affiliate university.

2.2. Main survey
The research was conducted from January to March 2019 at 13 public elementary schools in Tokyo, Saitama, and Kanagawa Prefectures, Japan. The sample population comprised 742 fifth-grade students (344 boys and 398 girls: age 11) and 708 sixth-grade students (361 boys and 347 girls: age 12), for 1450 students (705 boys and 745 girls). Among them, those who had not completed the questionnaire or completed it inadequately were excluded. Finally, 1176 valid respondents (576 boys, 600 girls) were included in the analysis. The survey was administered in groups during the class hour for each classroom. We used SPSS (version 25.0) for statistical analysis. All classes were taken in coeducational settings.

As with the pilot study, we obtained consent for the survey by explicitly stating that all questions were voluntary, and that no student was required to answer any question that they could not or did not want to. We used the same method with both grades.

The survey required students to respond to the question of whether they like or dislike PE classes, in addition to stating their grade and sex. Their responses were used to test the validity of the scale, because of our belief that positive or negative emotions toward a class may have a positive or negative impact on learners’ success experiences. Previous studies have shown that learners who experienced improvement or success in motor performance are more likely to be active or develop a liking for it (Sugihara, 2003). Learners who dislike PE classes are more likely to develop an avoidance attitude towards them (Sasaki & Suko, 2016).

It can be hypothesized that the like or dislike of PE classes causes differential success experiences. Thus, the hypothesis is that learners who like PE classes are more likely to have higher scores in items that measure successful experience in PE classes. In comparison, learners who dislike them are more likely to have lower scores in these items.

The students were asked to answer 17 items on “learners’ experience of success in elementary school PE classes” (selected from the pilot survey) and choose the answer that best describes their views on a 4-point scale (Strongly agree: 4 points; Agree: 3 points; Somewhat agree: 2 points; Strongly disagree: 1 point).

The main survey was also conducted with the approval of the ethics committee of the authors’ affiliate university.

3. Results

3.1. Exploratory factor analysis
First, we analyzed the 17 items for measuring learners’ experience of success in elementary school PE classes. To examine the items for bias, we considered 1) items with an average value ≤1.5 and ≥3.5, 2) items whose standard deviation was extremely small, and 3) items whose normal
frequency distribution had a concentration of 70% in a particular frequency. The results showed no bias for these items. We also calculated the correlation between items but did not find any with a value > .70.

We conducted an exploratory factor analysis (maximum-likelihood method with Promax rotation) of the remaining 17 items, which resulted in the extraction of five factors (as shown in Table 1).

Subsequently, the five factors were labeled based on item characteristics. The first factor, “improvement in motor skills,” included items such as “when the record improved,” indicating the experience of acquiring skills to perform physical exercises and sports. The second factor, “victory,” included items such as “when I was able to beat an opponent that I could not beat in the past,” indicating the experience of beating an opponent in the game. The third factor, “the success of others,” included items such as “when my friend who could not perform well was able to do it,” indicating the experience of a friend who successfully performed physical exercises and sports. The fourth factor, “the success of oneself,” included items such as “when I was able to make my presence felt,” indicating the experience of being superior to others. The fifth factor, “strengthening of bonds,” includes items such as “when the number of my close friends increased,” indicating the experience of deepening the friendship through cooperation with peers.

To examine the internal consistency of the scale, the Cronbach’s alpha coefficients were calculated as reliability coefficients for the five factors. The alpha coefficient was .85 for the first factor, .87 for the second factor, .82 for the third factor, .67 for the fourth factor, and .75 for the fifth factor. Except for “the success of oneself,” the coefficients calculated for all factors were > .70, confirming some degree of internal consistency. One possible reason for the coefficient for “the success of oneself” < .70 was the small number of items.

In this study, we named the developed scale “the scale for successful experiences in PE classes for elementary school students” (hereinafter referred to as the “PE success scale”).

3.2. Validation
To test the validity of the PE success scale, a one-way ANOVA was performed on factors of the scale by dividing the feedback regarding the like or dislike of PE classes into three categories: like, dislike, and neither (Table 2). The PE success scale showed significant effects on improvement in motor skills (F[2, 1173] = 31.81, p < .001), victory (F[2, 1173] = 17.55, p < .001), the success of others (F[2, 1173] = 9.38, p < .001), the success of oneself (F[2, 1173] = 21.60, p < .001), and strengthening of bonds (F[2, 1173] = 25.04, p < .001). Multiple comparisons showed that the “like” score was significantly higher than the “dislike” or “neither” score in all factors (improvement in motor skills, victory, the success of oneself: p < .001; the success of others, strengthening of bonds: p < .05).

These results revealed that learners who liked PE classes scored significantly higher in the items that measure successful experiences in PE. These results are as predicted, supporting the validity of the tested hypothesis.

3.3. Examination of fundamental statistics, grade difference, and sex difference included in the PE success scale
To calculate fundamental statistics of the PE success scale, a two-way ANOVA was performed with factors such as sex (male/female) and grade (fifth/sixth grades; Table 3). No interactions were noted between any of these factors. Subsequently, the main effect analysis revealed a significant effect of sex on “the success of others” (F[1, 1172] = 4.88, p < .05), with girls scoring significantly higher than boys. No significant differences in scores were noted regarding grade.
Table 1. Physical education (PE) success scale for elementary school students (Promax rotation) and interfactor correlations

| Items                                      | I   | II  | III | IV  | V   |
|--------------------------------------------|-----|-----|-----|-----|-----|
| I Improvement in motor skills (α = .85)    |     |     |     |     |     |
| I feel like “I did it!” with all my heart in PE classes when my record was improved. | .89 | .03 | .01 | -.05| -.07|
| I feel like “I did it!” with all my heart in PE classes when I achieved my goal. | .81 | -.07| .02 | .02 | -.01|
| I feel like “I did it!” with all my heart in PE classes when I passed the tests in the pool or jump rope tests. | .72 | -.05| .04 | .07 | -.03|
| I feel like “I did it!” with all my heart in PE classes when I was able to do well what I could not. | .70 | -.03| -.06| .01 | .12 |
| I feel like “I did it!” with all my heart in PE classes when I scored. | .41 | .30 | .00 | .22 | -.07|
| II Victory (α = .87)                       |     |     |     |     |     |
| I feel like “I did it!” with all my heart in PE classes when I beat an opponent that I was not able to beat before. | .06 | .85 | -.03| -.10| -.03|
| I feel like “I did it!” with all my heart in PE classes when I won a relay or game. | .03 | .80 | -.01| .02 | -.07|
| I feel like “I did it!” with all my heart in PE classes when I defeated a team with some good players. | -.12| .78 | .04 | .03 | .05 |
| I feel like “I did it!” with all my heart in PE classes when I or my team won first place | -.07| .78 | .03 | .05 | -.06|
| III Others' success (α = .82)              |     |     |     |     |     |
| I feel like “I did it!” with all my heart in PE classes when my friends who were not able to perform well became able to perform well. | .02 | -.09| .87 | -.01| .03 |
| I feel like “I did it!” with all my heart in PE classes when my friends’ records were improved. | .00 | .05 | .76 | -.06| -.08|
| I feel like “I did it!” with all my heart in PE classes when my friends did well on my advice. | -.01| .11 | .64 | .04 | .10 |
| IV One's own success (α = .67)             |     |     |     |     |     |
| I feel like “I did it!” with all my heart in PE classes when I made my presence felt. | .10 | -.10| -.03| .72 | -.02|
| I feel like “I did it!” with all my heart in PE classes when They say “you are awesome”. | -.08| .22 | .00 | .69 | .15 |

(Continued)
| Items                                                                 | I    | II   | III  | IV   | V    |
|----------------------------------------------------------------------|------|------|------|------|------|
| V Strengthening of bonds (α = .75)                                   |      |      |      |      |      |
| I feel like “I did it!” with all my heart in PE classes when the    | −.05 | −.14 | .06  | .16  | .72  |
| number of close friends increased.                                   |      |      |      |      |      |
| I feel like “I did it!” with all my heart in PE classes when we     | .21  | .22  | −.01 | −.23 | .57  |
| worked together as a team and were able to score.                   |      |      |      |      |      |
| I feel like “I did it!” with all my heart in PE classes when we     | .25  | −.09 | .06  | .01  | .55  |
| had a sense of oneness as a team.                                    |      |      |      |      |      |
| Factor correlation                                                   |      |      |      |      |      |
| I                                                                   | −    | .38  | .15  | .34  | .56  |
| II                                                                   |      | −    | .42  | .36  | .22  |
| III                                                                  |      |      | −    | −.07 | .59  |
| IV                                                                   |      |      |      | −    | −.05 |
| V                                                                    |      |      |      |      | −    |

4. Discussion
A successful experience in elementary school PE classes is based on five factors: improvement in motor skills, victory, the success of others, the success of oneself, and strengthening of bonds, with 17 items. First, “improvement in motor skills” was extracted. In Japan, the course of study requires this to learn PE (Ministry of Education, Culture, Sports, Science and Technology, 2018b). Hence, improvement in motor skills is positioned as a learning task that learners may find pleasure in overcoming. As items comprising this factor show, improvement in motor skills is assumed to be more easily felt by learners when they are visualized through improvement in records or passing the tests.

Second, “victory” was extracted. The essence of sports lies in their pursuit of competition and victory. It is quite natural to find pleasure in winning through physical exercises and sports in PE classes. Furthermore, the loser’s presence is precisely what makes it easier for the winner to have a sense of victory. However, excessive pursuit of victory can be a cause of conflict between learners. Hence, we need to be cautious about the risk carried by the successful experience of victory due to its clarity.

Third, the success of others, where the subject perceives the success of others as their own success, was extracted. PE classes use various learning forms according to learning content and consist of interactions between learners with varying skills and ideas. Students are said to develop the ability to think about things from the perspective of others when they reach upper elementary grades (Hoffman, 2000). Fujiya (2010) found a factor that is associated with viewing others’ emotions and activities that arise during the class as their own, as one of the components of empathy in Japanese elementary, junior high, and high school PE classes. Possibly, such cognitive development of learners makes it easier for students to perceive the success of others.

Fourth, the success of oneself was extracted. The success of oneself is understood simply as a score or praise from others. Since this factor is constituted by only two factors, “making one’s
Table 2. The difference in the experience of success according to like or dislike of physical education (PE) classes

|                                | (A) Like(N = 756) | (B) Neither(N = 334) | © Dis like(N = 86) | F Value | Multiple comparisons |
|--------------------------------|-------------------|----------------------|-------------------|---------|----------------------|
|                                | M     | SD     | M     | SD     | M     | SD     |                   |         |
| Improvement in motor skills    | 3.16  | .75    | 2.98  | .77    | 2.49  | .86    | 31.81             | ***     |
| Victory                        | 3.11  | .88    | 2.90  | .83    | 2.60  | .92    | 17.55             | ***     |
| Others’ success                | 2.76  | .82    | 2.61  | .86    | 2.41  | .89    | 9.38              | ***     |
| One’s own success              | 2.48  | .88    | 2.24  | .81    | 1.92  | .86    | 21.60             | ***     |
| Strengthening of bonds         | 3.04  | .82    | 2.89  | .80    | 2.40  | .85    | 25.04             | ***     |

*** p < .001

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Table 3. Fundamental statistics of the scale and grade/sex differences

|                      | Fifth-grade (N = 462) | Sixth-grade (N = 404) | F Value |
|----------------------|------------------------|-----------------------|---------|
|                      | Boys (N = 216)         | Girls (N = 246)       | Boys (N = 209) | Girls (N = 195) |
|                      | M  | SD | M  | SD | M  | SD | M  | SD | Grades | Sex |
| Interaction          | Multiple               |                       |         |     |     |     |     |     |        |     |
| Improvement in       | 3.01 | .80 | 3.07 | .78 | 3.07 | .77 | 3.09 | .80 | .72 | .78 | .36 |
| motor skills         | Victory                | 3.01 | .87 | 2.98 | .87 | 3.08 | .88 | 2.99 | .91 | .67 | 1.46 | .44 |
| Others' success      | 2.66 | .83 | 2.76 | .85 | 2.62 | .84 | 2.73 | .85 | .38 | 4.88* | .03 | Girls>Boys |
| One's own success    | 2.35 | .87 | 2.38 | .90 | 2.38 | .88 | 2.36 | .85 | .01 | .01 | .21 |
| Strengthening of     | 2.93 | .80 | 2.91 | .86 | 2.93 | .86 | 3.03 | .82 | 1.42 | .59 | 1.20 |
| bonds                |                       |                       |         |     |     |     |     |     |        |     |

*p < .05
presence felt” and “praise from others,” it symbolizes positive and powerful experiences for elementary school learners. These successes may be felt more easily by positive evaluations from others.

Fifth, the strengthening of bonds was extracted. In Japan, one of the learning contents required for PE is to cultivate an attitude of cooperating with others (Ministry of Education, Culture, Sports, Science and Technology, 2018b). Therefore, instructors aim to devise learning in a manner that requires learners to cooperate with others. Such a learning environment allows them to perceive the deepening of friendships through cooperation with others as a success. Meanwhile, students in their upper elementary school years form exclusive and closed peer groups, such as gang groups (Hosaka & Okamura, 1986). In this sense, learners find pleasure in building new human relationships through PE classes. These considerations show that learners tend to perceive changes in new human relationships through PE classes.

In sum, successful experiences in elementary school PE classes were shown to consist of five factors: improvement in motor skills, victory, the success of others, the success of oneself, and strengthening of bonds, with 17 items. As PE is learning of physical exercises and sports, motor skills improvement is essential for learners. Thus, it is relatively easy to have successful experiences that fall under the categories of improvement in motor skills and victory. In contrast, it is difficult to have successful experiences that fall under the categories of success of others and strengthening of bonds. Learners must improve their motor skills while interacting with each other to ensure various successful experiences in PE classes.

4.1. Grade and sex differences
An analysis of grade differences showed no significant differences between the fifth and sixth graders, suggesting that the experience of success in PE classes does not greatly vary according to the learners’ grades and experiences. Therefore, students can enjoy successful experiences in PE classes, regardless of their grade level and the content of education for each grade.

An analysis of sex differences revealed that girls are more likely to perceive the success of others as their own success than boys are. Regarding childhood friendships, Rose and Rudolph (2006) found that girls tend to be more cooperative with their friends, while boys tend to develop competitive relationships with their friends, as illustrated in their wish to make their presence felt more strongly than others and be ranked above them. There are many opportunities to compete in PE, involving individuals or groups, while doing physical exercises and sports. It may therefore be difficult for boys to appreciate the success of others truly. In contrast, girls are expected to truly appreciate the success of others and find joy in it. Thus, these sex-related differences in friendships may affect sex differences in the experience of success.

5. Conclusions
This study aimed to reveal the reality of learners’ experience of success in elementary school PE classes in Japan. Following a pilot study, the main study was conducted using a questionnaire survey of 1,450 public elementary school students in Japan. The results can be summarized as follows:

(1) An exploratory factor analysis revealed that the PE success scale consists of five factors: improvement in motor skills, victory, the success of others, the success of oneself, and strengthening of bonds.

(2) The PE success scale was confirmed to be reliable for internal consistency and reasonably valid.

(3) Analyses of grade and sex differences showed that girls scored significantly higher than boys in terms of the success of others did.
The study has made several recommendations for pedagogical practice. PE classes in Japan must realize “proactive, interactive, and deep learning.” To this end, learners will be encouraged to engage in their learning with a perspective to expand and deepen their ideas through dialogue with others (Ministry of Education, Culture, Sports, Science and Technology, 2018b). Instructors believe it is important to determine how learners see and think about PE classes accurately.

Using this scale, it is possible to visualize learners’ success experiences. Therefore, instructors will be able to understand the actual situation of learners in more detail. This will enable them to set tasks and rules that facilitate learners’ various success experiences, and to conduct classes according to learners’ actual conditions.

Additionally, the use of this scale before and after implementing a study unit is expected to reveal learners’ study outcomes in a multifaceted manner. In many practical PE studies in Japan, motor skills were compared and tested before and after the study unit. The use of the present scale in these practical studies may capture how learners perceive their psychological changes while improving their motor skills. These studies are expected to motivate learners to participate in PE classes and lead to the development of a lifelong attitude to enjoy physical exercise.

Finally, we would like to note the limitations of this study. In this study, we examined the internal consistency for reliability. In addition to that, there is a way to improve the accuracy by conducting a test-retest method. However, in Japan, there is a high hurdle in implementing the retesting method from the viewpoint of personal information, and in this study, we could not obtain permission from the school and had to abandon it. This is a limitation of this study.

In the future, there is a need for the development of a PE success scale for junior high and high school students, as well as a simplified scale for application in actual PE classes.

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Notes
1. In Japan, the Ministry of Education, Culture, Sports, Science and Technology provides nationwide standards for the organization of educational curricula based on the School Education Act. These standards are termed “the Course of Study,” wherein objectives for each academic subject, as well as rough educational content, are defined for each educational stage, from elementary school to junior high school and high school.
2. Explanation of the course of study is prepared by the Ministry of Education, Culture, Sports, Science and Technology to explain the meaning and interpretation of descriptions in the course of study. It is prepared for each subject when the course of study is revised. Instructors are expected to deepen their own understanding of each subject’s content through the explanation of the course of study and to reflect it in their lessons.
3. This study was conducted with students in upper grade levels, given their cognitive development and abilities to complete a questionnaire survey.
4. The PE curriculum for elementary schools in Japan can be divided into three categories: “ensure that knowledge and skills are acquired,” “develop the pupils’ abilities to think, make judgments, and express themselves,” and “cultivate the motivation to learn and humanity.”
5. In Japan, “Developmental stages of friendships from childhood to adolescence,” proposed by Hosaka and Okamura (1986), have been widely recognized as the standard measure for the development of friendships. Specifically, they presuppose a transition from a gang group (during upper elementary school years), which emphasize homogeneity, to a club group (during junior high school years) to confirm similarity, and to a peer group (during high school years or after high school), to mutually recognize homogeneity.

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