

## Motivation in physical education for junior high school students: a gender perspective

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### Abstract:

Motivation is an important factor that teachers should consider in their classes. The motivation that characterizes itself is related to several categories, including intrinsic motivation, identified regulation, introjected regulation, external regulation, and amotivation. Previous research on student motivation in Indonesia is still limited. Existing research is still being reviewed using two broad categories: intrinsic and extrinsic motivation. This study aimed to determine the differences in the motivation of male and female students of State Junior High School in Malang in following the physical education learning process. The research design used was a causal-comparative design. The sample of this study was 1,114 students in VII, VIII, and IX classes. Sampling selection was cluster random sampling, which is divided into several regions in Malang City. The instrument used was a non-test, namely the motivation questionnaire in physical education learning. Hypothesis testing for the Mann-Whitney Test of the four motivation categories was smaller than 0.05 (p-value <0.05), meaning that there are significant differences in the categories of intrinsic motivation, identified regulation, introjected regulation, and external regulation between male and female students. The results of the t test (accent) of the amotivation category were smaller than 0.05 (p-value <0.05), meaning that there was a significant difference between male and female students. The results of the study showed that there were significant differences in student motivation between male and female students in engaging in physical education classes. Because of this difference in motivation, teachers must continually improve and modify learning patterns based on the motivation of each student. Teachers should actively establish a learning environment that motivates students to learn in their physical education class.

**Key Words:** student's motivation, physical education, gender

### Introduction

The phenomenon of a decrease in physical activity in adolescents in this modern era has started to become common (Liu et al., 2021). The decrease in physical activity can be triggered by the low quality of physical activity in the school environment. However, a high participation in physical activity by students during adolescence can lead to a better quality of life (Evaristo et al., 2019; Guijarro-Romero et al., 2020; Viciano et al., 2019), while a poor quality of physical activity in adolescents can cause poor physical and mental condition, obesity, and cardiovascular disease (Hills et al., 2015). In the context of schooling, the low involvement of students in the learning process can be influenced by the level of satisfaction of students participating in class (Behzadnia et al., 2018). Thus, it becomes a challenge for teachers to create a comfortable learning climate to motivate students to take an active role in the movement tasks that will be assigned (J. L. Johnson et al., 2019).

Adolescents tend to find it difficult to prioritize health through physical activity, this is evidenced by the high screen time activity which is then related to excess energy input so that it triggers the risk of obesity in adolescents (Kapedani & Mema, 2022). Meanwhile, based on recommendations related to movement activity patterns, at least do physical activity  $\geq 60$  minutes with moderate to vigorous physical activity, then 2 hours for screen time activities (Kanyinga et al., 2020). However, this active living habit is still not a priority because it is caused by low motivation in physical activities. Motivation related to the participation of movement activities in adolescents is closely related to health outcomes that are beneficial to the body (Farren et al., 2021). The higher the motivation of movement, the higher the intensity of the individual in carrying out physical activity. Movement participation through good physical activity refers to generating antidepressant effects through biological and psychosocial aspects (Kandola et al., 2019).

Student learning motivation is one of the essential factors for implementing physical education in the school environment. One of the supporting factors in the implementation of good physical education class is the motivation of students for following the entire learning process (Chen et al., 2014). Motivation is related to a psychological construct in which a person is driven or directed by strengthening actions to achieve desired goals (Bice et al., 2016). Motivation is the driving force of human behavior as well as a determinant of behavior. Motivation in students is divided into intrinsic and extrinsic motivation (Cortés et al., 2017). Intrinsic motivation

is a person's involvement in an activity to obtain pleasure and excitement (Jaakkola et al., 2015). Meanwhile, according to González-Valero et al. (2019), in extrinsic motivation, a person obtains self-satisfaction based on recognition and social status. Intrinsic motivation is related to the encouragement of individual interest in self-interest for pleasure in learning, but extrinsic motivation is more related to the encouragement of other individuals who are involved in an activity (Afzal & Ali, 2010). However, some experts also divide the motivation category into five categories, namely intrinsic motivation, identified regulation, introjected regulation, external regulation, and amotivation (Ryan & Deci, 2020).

There has been considerable motivational research conducted in Indonesia, but they have studied more about how big motivation is without measuring each type of motivation (Nur et al., 2019b). Research that focuses on the five categories is still very rarely performed. Some studies have been carried out but involved vocational high school students (Kurniawan, Paulina Heynoek, et al., 2021) and focused on female students only (Heynoek et al., 2020). Other research has also discussed which motivation is the most dominant among the five categories of students during physical education learning (Kurniawan, 2022). Research by Nur et al. (2019a) examined this from a gender perspective as a whole but did not specifically look at the motivational differences of each motivation type. Therefore, researchers need to conduct studies that examine the differences in motivation between male and female students during physical education classes in junior high school. This study was conducted to deepen the study of motivation as a whole to determine how each type of motivation in physical education learning in schools is based on gender.

### Material & methods

The method in this study was a causal-comparative research design. In this study, the sample selection was done via cluster random sampling. The population in this study included students from state junior high schools in Malang City with 20,826 students from 27 state junior high schools. The sample size in this study was determined from at least 392 students and calculated using the Slovin formula; sampling in this study involved the systematic random sampling technique. To obtain good data, researchers distributed questionnaires by obtaining 1,114 respondents consisting of 519 male and 595 female students. The results were from 13 state junior high schools throughout Malang.

The instrument used in this study was a non-test, namely a motivational type of questionnaire in physical education learning developed previously (Goudas et al., 1994). The questionnaire consists of five types of motivation: amotivation, external regulation, introjected regulation, identified regulation, and intrinsic motivation. The questionnaire consists of 20 questions with answer choices. The scale used is the Likert scale of 1–7, with suitability or agreement ranging from a scale of 1 for not at all to a scale of 7 for strongly agree. After translated into Indonesian, a trial was conducted to calculate the validity of the questionnaire. The value for the corrected item-total correlation above the *r* table was 0.2126, which means that the questionnaire was declared valid. Meanwhile, the reliability was at 0.882, which showed good reliability. Data collection in this study was in the form of a motivational questionnaire of asking written questions in paper form that were distributed or in non-written form, i.e., online in the form of Google Forms. Quantitative data analysis involved parametric statistical techniques in the form of an independent sample *t* test. The data analysis technique requires prerequisite tests that include a normality test using the Kolmogorov-Smirnov test and a homogeneity test via Levene's test.

### Results

From the 1,114 respondents, Table 1 reports the results of their responses, which consist of five indicators. The motivations of males and females are different; for males, there were 519 students, and for females, there were 595 students.

**Table 1.** Description of Motivation Types

Gender		Intrinsic Motivation	Identified Regulation	Introjected Regulation	External Regulation	Motivation
Male	N	519	519	519	519	519
	Mean	22.60	21.79	17.08	17.01	11.58
	Median	23.00	22.00	17.00	17.00	12.00
	%	25%	24.2%	19.1%	18.9%	12.8%
Female	N	595	595	595	595	595
	Mean	20.99	20.33	15.74	16.23	10.89
	Median	20.00	20.00	16.00	16.00	11.00
	%	25%	24.2%	18.6%	19.3%	13%

The intrinsic motivation mean (average) was 22.60, the median (mean value) was 23.0, and the percentage answered by respondents was 25%; the identified regulation mean (average) was 21.79, the median (mean value) was 22.0, and the percentage answered by respondents was 24.2%; the introjected regulation mean (average) was 17.01, the median (mean value) was 17.0, and the percentage answered by respondents was 19.1%; the external

regulation mean (average) was 17.01, the median (mean value) was 17.0, and the percentage answered by respondents was 18.9%; the amotivation mean (average) was 11.58; the median (mean value) was 12.0, and the percentage answered by respondents was 12.8%. Meanwhile, from the table above, 595 female students had an intrinsic motivation mean (average) indicator of 20.99, the median (middle value) was 20.0, and the percentage answered by respondents was 25%; the identified regulation mean (average) was 20.33; the median (middle value) was 20.0, and the percentage answered by respondents was 24.2%; the introjected regulation mean (average) was 15.74, the median (mean value) was 16.0, and the percentage answered by respondents was 18.6%; the external regulation mean (average) was 16.23, the median (mean value) was 16.0, and the percentage answered by respondents was 19.3%; the amotivation mean (average) was 10.89, the median (mean value) was 11.0, and the percentage answered by respondents was 25%.

The hypothesis test was a non-parametric difference test, namely the Mann–Whitney Test and the unrelated sample t test (accent). The Mann–Whitney test was used to determine the differences in the categories of intrinsic motivation, identified regulation, introjected regulation, and external regulation between male and female students. The Mann–Whitney test was used because these data were not normally distributed and showed homogeneous data variance. Meanwhile, to calculate the difference in the amotivation category between male and female students, the t test (accent) sample was not related. The test was used because the amotivation data were not normally distributed and did not have a homogeneous variance.

### Test of Differences in Motivation Types between Male and Female Students

The results of the Mann–Whitney test in the categories of intrinsic motivation, identified regulation, introjected regulation, and external regulation between male students and female students are shown in Table 2.

**Table 2.** Mann–Whitney Student Motivation Data

	Intrinsic Motivation	Identified Regulation	Introjected Regulation	External Regulation
Mann–Whitney U	114168.500	118212.500	131042.000	140979.000
Wilcoxon W	291478.500	295522.500	308352.000	318289.000
Z	-7.536	-6.777	-4.371	-2.512
Asymp. Sig. (2-tailed)	.000	.000	.000	.012

a. Grouping Variable: Gender

As shown in Table 2, the asymp. sig. (2-tailed) value for the intrinsic motivation category was 0.000; for identified regulation, it was 0.000; for introjected regulation, it was 0.000; and for external regulation, it was 0.012. From these results, the value of asymp. sig. (2-tailed) value for the four categories of motivation was less than 0.05 ( $p\text{-value} < 0.05$ ); thus,  $H_0$  was rejected, meaning that there was a significant difference in intrinsic motivation, identified regulation, introjected regulation, and external regulation between male and female students.

### Amotivation Difference Test between Male and Female Students

The results of the t test (accent) of the independent sample in the amotivation category between male students and female students are shown in Table 3.

**Table 3.** T test Amotivation Data

		T test for Equality of Means		
		t	df	Sig. (2-tailed)
Amotivation	Equal variances assumed	2.807	1112	.005
	Equal variances not assumed	2.770	1005.131	.006
Ho				Rejected

Based on Table 3, we obtained a significance value (2-tailed) for non-homogeneous variances (equal variances not assumed) for amotivation of 0.006. From these results, the significance (2-tailed) of amotivation was smaller than 0.05 ( $p\text{-value} < 0.05$ ); thus,  $H_0$  was rejected, meaning that there was a significant difference in amotivation between male and female students.

### Discussions

Based on the findings of this study of a sample of 1,114 students, the motivations for male and female students from the state junior high schools in Malang City according to five indicators were slightly different according to the answers of all respondents. Intrinsic motivation is contained in a person, and the person will behave for the satisfaction that is inherent in the behavior itself. Forms of intrinsic motivation include interest,

pleasure, and self-satisfaction (Ryan & Deci, 2020). The difference in intrinsic motivation between male and female students was that male students tend to have intrinsic motivation in activities that include factors of strength, competition, and challenges (Egli et al., 2011). Meanwhile, female students are more motivated by non-competitive activities (T. G. Johnson et al., 2011). By voicing students' desires, concerns and problems, students may feel valued and thus are more willing in their learning (Haerens et al., 2019). Furthermore, to maintain the intrinsic motivation of students, it is necessary for parents and teachers to create autonomous conditions in which students are intrinsically motivated to learn and perform physical activities (Froiland et al., 2012).

Many students were motivated because of the identified regulation indicators, proving that many students want to know directly the information or to obtain benefits for themselves. Here, identified regulation is considered as self-choice, freely chosen and consistent with individual values and beliefs. The forms of identified regulation include personal interests, consciously appreciating activities, and support for what is to be achieved (Ryan & Deci, 2020).

The percentage of introjected regulation indicators for male and female students was higher for male students. This shows that male students have self-motivation in learning physical education. However, they do it by compulsion or because of fear if they do not do it. Students who are motivated are not motivated of their own volition, so there is coercion from within, not from other people but because there is an obligation to do so (Koka et al., 2019). The forms of introjected regulation include ego involvement and recognition from self and others (Ryan & Deci, 2020).

Regarding external regulation, female students showed a high tendency compared to male students. This is because female students who participate in physical education learning want to get a gift or reward from the teacher. For women participating in physical education, learning may be very low, and they may be lazy; thus, how teachers respond to this should involve giving praise, grades, or gifts. There are many more teachers whose purpose of this motivation is for students to want to do or be able to follow the learning. Forms of external regulation include the influence of punishment or reward, compliance, and resistance to the learning process (Ryan & Deci, 2020). Increasing student motivation in learning physical education can be influenced by peers, and student engagement in physical activity involves receiving rewards in the form of social recognition from peers (Wallhead et al., 2013).

Amotivation is a condition where individuals have a low level of motivation, so the lower the motivation of an individual, the lower the motivation to carry out activities (Shen et al., 2010). Forms of amotivation include a lack of achievement of the expected competencies, being less valuable, and being irrelevant to the learning process (Ryan & Deci, 2020). For the female amotivation indicator, the difference was 0.2% higher than that of the male, showing that women are less motivated in participating in learning according to the data obtained, and 77 female students were not motivated to participate in physical education learning (Rahman, 2018). Many factors that influence unmotivated students are strong because there are many public junior high schools in Malang City that carry out the Full Day School program. This shows that the motivation in physical education is very low because of the Full Day School factor that forces them to study continuously.

Gender greatly affects the behavior, mentality, attitudes, and characteristics of individuals. The differences between women and men are evident in the anatomical aspect, but on the physiological side, the differences are less clear (Gregg & Gregg, 2017). Thus, these factors can affect the differences in the motivation of male and female students in physical education class. Female students will be more diligent than male students (Marbun, 2018). Gender differences in the implementation of physical education by male and female students can be seen in the competence and pleasure that students get from attending physical education classes (Preece & Bullingham, 2022). Male students feel competence and enjoyment more through physical activity compared to female students. Students view physical education differently; boys are more motivated to perform physical activity in the moderate to severe categories, while girls are more motivated toward knowledge through physical competence (Gråstén & Watt, 2017).

The motivation for male and female students at the junior high school level for participating in physical education learning is very different from when they enter their early teens, namely puberty. Gender differences in females during puberty will produce a series of emotional disturbances and anxiety (Crujisen et al., 2019). Every pubescent child has different characteristics and forms, including anxiety, a tendency to oppose parents and siblings, and inner conflicts (Kartono, 2006). This makes the female feel tired easily and have mood swings and feelings that are very sensitive. Then, there are physical differences between girls and boys. In boys, muscle development begins to increase, and hair grows around the pubic area, while in girls, there are many physical changes, such as breast growth and widening of the hips as well as the beginning of menstruation (Olivia & Sasha, 2021). This difference can also be measured through differences in the level of physical ability, which results in large differences in students' physical capacities (Borukova & Mavrudiev, 2020).

The gender differences based on other aspects show that the number of red blood levels in women are less than in men, the ability to breathe is also lower than in men, and the muscles are not as muscular as the muscles of men (Shihab, 2004). Women's diameter and muscle mass can be increased with systematic training, but they cannot match that of men because their testosterone levels are lower than men's are. The difference in physical ability is lower compared to boys of the same age, making boys tend to have more motivation toward physical

education (Timmons et al., 2012). Based on gender, the average academic score of females is higher than that of males. However, the average academic motivation score of males is higher than that of females (Sivrikaya, 2019). The contribution of pleasure in boys toward physical activity differs from that of girls (Brown & Bowmer, 2019; Butt et al., 2011). Apart from differences in physical abilities between boys and girls, excess body weight influences the mastery of physical competencies (Quennerstedt et al., 2021). Therefore, teachers need to pay attention and consider different physical activity activities to maintain student interest in physical education class.

One of the strategies that teachers can use is interactive media in learning to increase student motivation (Sugiarto, 2021). Good classroom management by teachers can encourage students' interest in physical activity (C. E. Johnson et al., 2017; Kurniawan, Wibowo, et al., 2021; Sevil-Serrano et al., 2020). A well-created motivational climate by teachers in physical education has a positive influence on students' satisfaction and psychological needs, intrinsic motivation, and physical activity (Grasten et al., 2012; Zhang et al., 2011). In creating a good motivational climate, the teacher's role is very important for building a learning system in the classroom, especially in providing learning materials. Curriculum developers and teachers must continue to modify learning programs to suit the changing needs and interests of students (Gao et al., 2011). Students' autonomy in learning motivation can be trained by teachers by trying to understand, acknowledge, and if possible, be responsive to students' perspectives (Ryan & Deci, 2020). Apart from the various types of motivation, motivation becomes the main key to student success if there is a dominant will to achieve learning success; of course, it will also affect student behavior in accordance with educational goals, and motivation can be used as a benchmark for student success. For achievements in the world of education (Taştan et al., 2018), the high motivation of these students towards one subject will certainly make that subject more understandable by these students and can be used in their daily lives and remembered for a longer time. All learning and teaching transactions must be motivated because motivation can affect learning effectiveness (Sogunro, 2014).

### Conclusions

According to the data result, it can be concluded that there is a significant difference in student motivation between male and female students in participating in the learning of health workers at State Junior High Schools throughout Malang. These findings provide additional evidence against other studies that there are differences in motivation. This difference also adds to the evidence that there are not only two different categories, both intrinsic and extrinsic, but also the categories of intrinsic motivation, identified regulation, introjected regulation, external regulation and amotivation.

This result shows that teachers in carrying out the learning process must pay attention to the differences in motivation that exist gender-wise in student participation, to provide appropriate services so that the satisfaction of students in carrying out learning activities can be achieved. In this case, teachers are expected to be more creative and innovative in developing learning strategies and media and preparing the student learning process to foster student learning motivation. Although the results of this study show that there are differences in the motivation of male and female students, this study still has many limitations. Because this study only employs quantitative methods, the factors underlying these differences have not been thoroughly investigated. Further research needs to examine specifically the causes of these differences qualitatively. Subsequent studies also need to focus on measuring student motivation at other school levels as well as conducting comprehensive cross-sectional studies. That studies will provide information about all motivations that match the characteristics of the students.

### Conflicts of interest

The authors declare that there are no conflicts of interest.

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