

Physical Education Program in Elementary School: Motivation Comparison to Learn Table Tennis using Mini-pong based on Gender

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Abstract: This research was conducted based on the problems in table tennis learning in elementary school. The problem is lack of motivation to learn table tennis, especially for female students. The purpose of this research is to examine the difference in students' motivation in table tennis learning between male and female students. In this research, 10 treatments were given. The participants were grade 5 students of elementary school, consisting of 20 males and 15 females. Before and after receiving the treatment, the participants had motivation tests and were scored using a motivation scale developed by Marten & Weiber on the pretest and posttest. It is revealed that p-sign value was $0.015 < 0.05$, meaning that there was a significant difference between the motivation in learning table tennis for male and female students.

1 INTRODUCTION

This research was initiated from problems in table tennis in elementary school. Some of the apparent problems were: (1) the standard table was considered too large for elementary school students (especially in West Java region), although it had changed in several regions, which was observed from the progress of table tennis learning on the intra curricular level or on the extracurricular level; (2) the lack of students' motivation in learning table tennis games especially for the female students which was due to the difficulty of table tennis learning by using standard tables. The female students were less interested in learning table tennis. Furthermore, the level of participation seemed lower; (3) there was not any table tennis learning in most elementary schools in Indonesia. This was because table tennis was considered not practical for learning. In contrast to other materials—such as soccer which only requires a ball and a field, volleyball which only requires a net and a ball, and basketball which only requires a ball and basketball hoop—table tennis requires a table, a net, a bat and a ball. In this case, the table can only be used by 8 students. If a class consists of 32 students, there is a need for at least 4 table tennis tables. These are the reason why table tennis is not intracurricular.

Table tennis is a sport that has a lot of fans among the people of Indonesia (Asri, Soegiyanto, & Mukarromah, 2017); (Safari, 2016; Pujianto, 2015); (Nuansari, Purnomo, & Yunitaningrum, 2016); (Jumadi, Simanjutak, & Hidasari, 2017); (Helmi, 2016; Hirdausa, Atiq, & Supriatna, 2014). Table tennis is the most frequent game played among children, and it loses its popularity among adults. In general, the tennis table is visibly more popular among men, but there is a clear age-related pattern for this gender gap (Biernat E, Sonia Buchholtz & Justyna Krzepota, 2018). “In the case of children, increasing the popularity of tennis tables should start from teacher-led training” (Herrero, R., Pradas, F., Castellar, C.; Díaz, A, 2016).

However, table tennis games were still unfamiliar for elementary school students in several regions in Indonesia, especially in West Java Province. This occurred because the game was not taught in the elementary school level. Hence, the game was only known by students of adolescence as they increase their knowledge and level of education. One of the classic reasons why table tennis was not included in curriculum was because the available facilities and infrastructure were quite minimal and inadequate (Pairin, 2013). This was very unfortunate because there were many benefits from the game including that the table tennis had a

greater influence on cognitive functions than that of other exercise types. (Jeoung, B.J., 2014).

In Sumedang, one of cities in Indonesia, the elementary schools generally had one table for tennis table and some had two tables. However, table tennis material had never been taught to the students. The reason was that the students' interest in playing table tennis was considered low, unlike in other materials such as soccer, volleyball, and other game materials. The lack of interest (motivation) in students towards table tennis games was due to the difficulty of students in learning table tennis games.

Another reason was because the students experienced difficulties when they learned to play table tennis with a standard table. Thus, the students judged that table tennis was difficult to learn. Another problem was that the female students seemed to be less interested in learning table tennis, unlike the male students. In previous research, it was found that the college students' exercise motivation was different according to the gender, revealing that that the male students had a tendency to be more motivated by intrinsic factors, whereas the female students were more motivated by extrinsic factors" (Egli et al., 2011; Gao & Xiang, 2008; Gillison, Standage, & Skevington, 2006).

2 THEORETICAL BACKGROUND

A table tennis game is played by two or four players by hitting a ball over the net using a bat. Table tennis is a game that uses a table as a field bounded by a net that uses a small ball made of celluloid and the game uses a bat or a bet (Sudrajat, Nasuka & Irawan, 2019).

Table tennis game skills include: (a) grip, (b) stance, (c) types of strokes, and (d) footwork" (Utama, 2004)." There are four types of strokes, including: (1) drive, (2) push, (3) chop, and (4) block (Sutarmin, 2007).

Modifications in general is defined as changing or adjusting certain tools to make them easier to use and cheaper to make. Modification can be interpreted as an effort to make changes with adjustments both in terms of physical material (facilities and equipment), as well as in purpose and manner (methods, styles, approaches, rules and judgments) (Bahagia, 2010).

Mini-pong is a name of a modified tool from a standard table tennis game tool. It is made by reducing the size of the table as the playing medium.

Therefore, it is possible to be used by elementary school children because of the mini size, with the length of 100-140 cm, width of 65-76 cm, and height of 50-66 cm, or they can be adjusted with the player. This means that it does not have a standard size. These measurements were obtained from several sources including <http://sportovarylviv.com>.

Motivation is a change in energy within oneself as a strength and drive to meet individual needs (specified goals). Motivation is a process to increase a motif or motives into actions or behaviors to satisfy or fulfill needs or to achieve goals (Nursalim, et al, 2007). Motivation is divided into two types, intrinsic motivation and extrinsic motivation. Intrinsic motivation is a form of encouragement to learn that comes from within a person and does not need external stimulation. While extrinsic motivation is the encouragement to learn that comes from outside of one's self (Hapsari, 2005).



Figure 1: Mini-ping Table
(<https://aussietabletennis.com>)

3 METHOD

This research involved fifth grade elementary school students, having 20 male students and 15 female students in total. All the research subjects had approval from their parents and the school where they studied. This research was conducted by giving 10 treatments. Before and after the treatments, the subjects were given an instrument.

The motivation scale developed by Marten and Weiber (Hidayat, 2010) was built by three dimensions of motivational constructs, namely 1) intrinsic motivation, 2) extrinsic motivation, and 3) amotivation. These three dimensions were then

developed into seven indicators, namely 1) intrinsic motivation to know, 2) intrinsic motivation toward, 3) intrinsic motivation to experience simulation, 4) external regulation, 5) introjection regulation, 6) identified regulation, and 7) amotivation.

Table 1: Predictors (Constant), Posttests female students (Decy and Ryan in Duda and Treasure, 2001)

	Regulatory	Type of Motivation	Behavior
Amotivation	Nonregulasi	There is not any internal or external motivation, no perceived reason for participation	Non- <i>self-determined</i>
Extrinsic Motivation	External regulation	An athlete/student is driven by a desire to receive external reward	↓
	Introjected regulation	Athlete's internalized reason for participation are tied to internal	
Intrinsic Motivation	Identified regulation	Participation is self-determined but that activity is not considered fun	<i>Self-determined</i>
	Internal motivation	Participation is self-determined and is inspired by the inherent pleasure of the activity	

4 RESULTS AND DISCUSSION

Based on the calculation results using the SPSS program, the following results were obtained:

a R Square Test (Simple Regression) in the Male Students

Table 2: Predictors (Constant), Posttest male student

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
MI	.651a	.424	.392	3.38825

From the data, it can be seen that the value of the determination coefficient (R Square) in the experimental class is 0.424. This means that male students' motivation increased by 42.4%.

b R Square Test (Simple Regression) in the Female Students

Table 3: Predictors (Constant), Posttests female students

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
Fml	.607a	.368	.319	1.94420

From the data above, it can be seen that the coefficient of determination (R Square) in the experimental class is 0.368, which means that the motivation of female students is 36.8%.

c Difference Test of the Two Average Values at P-Value ≤ 0.05

Table 4: Difference test of Female and Male

Variable	T	Sig. (2-tailed)
Motivation Male >> Female	2,55	0,015

$P \leq 0.05$; there were significant differences before and after the treatment (there was a significant increase).

$P > 0.05$: there was no significant difference before and after the treatment (there was no significant improvement).

Based on the calculations, the motivation variable to learn table tennis games between male and female students obtained p-sign value $0.015 < 0.05$, meaning that there was a significant difference between the motivation to learn table tennis for male students and female students.

At the beginning of learning, most students refused to use mini-pong because they thought that it was difficult in using the mini pong. In addition, the skills they had were still inadequate. In order to make the learning process of table tennis enjoyable, the teachers must try to stimulate the students to be motivated because "motivating students is one of the essential tasks physical education (PE) teachers have to face in regular PE classes (Rolf Kretschmann, 2014). Therefore, PE teachers had to apply motivational strategies to engage unmotivated students and to sustain motivation in the engaged students (Rolf Kretschmann, 2014).

This situation did not last long; the learning process gradually gained student responses because the students were provided with simple games in learning table tennis games using a mini table.

The motivation to learn table tennis games began to appear at the 4th meeting. This could be seen from their involvement in the activity of table tennis. Some students, especially the boys, competed to do more and longer drills. This motivation increased along with their ability which continued to improve. Student's motivation affects every aspect of school

life, attendance, academic performance, to extra-curricular activities (Baranek, 1996).

Student's learning motivation is a form of encouragement under student psychology and the level of motivation cannot be observed directly without using certain tools. However, the impact of motivation can be observed through behavior. In the learning process, the researchers could see the students' enthusiasm in learning the game of table tennis. It was indicated by the students that eagerly wanted to get another turn. For example, when the students stood in line to take turns to practice with the specified number of rallies, a student who had taken his or her turn cuts the line when he or she should have moved to the back of the line to get another turn as soon as possible. This is a behavior of motivation that was shown by students when learning to play table tennis.

The motivation aspect plays a very important role in one's mentality because motivation is one of the determining factors that affect human behavior. Having the motivation, one can push himself to practice more actively and achieve maximum results. Motivation will encourage someone to practice, work hard, and endure longer in participating in a sport or learning activity. "Motivation is a mental impulse that exists in a person to drive behavior, to determine the level of activity, intensity, and consistency to achieve certain goals." (Hamzah, 2006; Dimiyati & Mudjiono, 2002). From a psychological perspective, motivation is an innate and autonomous mental process (Reeve J, 1996). In this perspective, motivation depends on the internal mental processes including needs, emotions, and cognition. Particularly, the process of cognition is driven by aspects such as thoughts, beliefs, and expectations (Chen, A. 2015).

Learning that uses a peer teaching model and a playful approach encourages students to compete to be the best. Moreover, giving rewards that stimulate extrinsic motivation plays a role in these activities or external factors. External factors include environmental situational variables (e.g. motivational climate of the class, teacher's expertise, school characteristics, social environment, parents' involvement, providing choice), and contextual variables (e.g. curriculum, comprehensive intervention or PE programs, organized sports programs, and PE teachers (Blanchard et al., 2007; Cloes, 2005; Xu F & Liu, 2013). However, this provoked intrinsic motivation to further strengthen the motivation in students to do their best in the activity of table tennis. First, intrinsic motivation occurs when the students participated in class

because they enjoyed learning and experiencing the different practices, which is the most self-determined form of motivation (González-Cutre, Sicilia, & Moreno, 2011). Intrinsic motivation occurs when students participate in class because they enjoyed learning and experiencing the different practices, which is the most self-determined form of motivation (Rolf Kretschmann, 2014).

The motivation that the students had was the impact of the use of learning tools that could accommodate student learning. Several investigations showed that self-determined positive motivation relates to greater commitment and adherence to the practice of sport (Standage, Duda, & Ntoumanis, 2003); (Moreno et al., 2007). The use of learning aids in the teaching and learning process can generate new desires and interests, generate motivation and stimulation of learning activities, and even bring psychological influence to students (Hamalik in Arsyad, 2005).



Figure 2: Students Activity with Use Mini-pong

Learning will attract students' attention so that it can foster learning motivation (Sudjana & Rivai in Arsyad, 2005). The male students' motivation was higher than that of female students, as seen from the male students' enthusiasm in taking turns in the learning process. They wanted to repeat the table tennis movement more than the female students did. The male students were more likely to mention enjoyment, challenge, social recognition, affiliation, competition, and strength and endurance as motivating factors for exercise, whereas females were more likely to state ill-health avoidance, to maintain positive health, weight management, and appearance (Lauderdale et al., 2015). Studies in the field of motivation and gender show that boys and girls have different motivations and needs for sports (Azzarito & Solmon, 2009); (Crosnoe, 2001); (Daley and O'Gara, 1998); (Meece, Lienke and

Burg, 2006). The two opinions above are in line with the results of the research. The female students were more motivated to play with friends compared to competing with friends, so that they avoided competition between friends. The boys gave more importance to the 'status', to 'show that I am better than others,' or to 'win or defeat the other.' The girls had higher scores related to the competence, the fair play and sociability (Gonçalves, Silva and Cruz, 2007).

In addition to motivation, gender roles also influenced student motivation in learning table tennis. This was because male and female students were raised differently in the same environment. As a result, the male and female students had different perspectives in participating the table tennis learning.

In a study on more than 100 students, it was found that the male students were involved in more interactions than female students. Likewise, in a research conducted by 24 professors from Harvard University found that male students dominated discussion classes (Santrock, 2003). This was because male students were better at physical and verbal skills. Meanwhile, female students preferred private conversations and intimate conversations that were oriented towards relationships.

The male students play in large, hierarchically structured groups, and their groups often regard someone who is more respected as a leader. This leader usually tells the other students what to do and how to do it. Another way for male students to get attention is by performing physical skills that they master. In games played by male students, winners and losers are often used as the topic of debate (Santrock, 2003). On the other hand, female students often play in small groups or pairs and the center of social attention is a close friend of the girls. In the friendship between female students and their peers, intimacy is preferred (Santrock, 2003).

The female students were not very fond of competition, in contrast to the male students who competed to acquire recognition from friends and teachers. The female students preferred collaborative learning with friends and carried out learning activities together without the desire to be more powerful in learning table tennis. Hence, their motivation depends on that of the other friends. The female students would help each other to achieve mutual success, but this was rarely seen because they were not too motivated to do strenuous physical activities.

Several researches support the situation in which male students are more interested in doing sports

activities such as table tennis compared to women. "Regarding the importance and usefulness of PE, male students show a higher value than girls, (Moreno et al. 2006). The male students perceived that table tennis was more important to them. This is because table tennis is a physical activity. Thus, male students preferred physical activity than the activities dominated by small muscles. On the other hand, female students were more interested in doing activities dominated by small muscles compared to activities dominated by large muscles such as sewing, weaving, painting, and painting.

Regarding the motivational types, the data from this study support that the more self-determined motivational profile fits for students who consider that PE is more important (Baena-Extremera et al., 2012); (Gómez-López et al., 2013); (Granero-Gallegos et al., 2012); (Moreno et al, 2006).

In this regard, Ennis (1996) says that female students tend to have more negative experiences about PE and are less interested in participating in this field and doing physical activities in their free time. For example, physical activities will have an impact on the body, such as sweating and discomfort when doing sports. This perception is a reason why some female students do not want to be involved too much in PE activities.

The motivation shown by male students was rather extrinsic compared to that of the female students which was rather intrinsic. The desire of the male students to look better in front of their friends made their motivation greater than of the female students. Even though the motivation shown by female students was intrinsic, they did not care for their learning ability and they were just participating. Therefore, it did not encourage greater learning motivation.

5 CONCLUSION

Based on the results of the calculation and discussion, it was found that the motivation to learn table tennis by using tool modification (mini-pong) was greater in male students compared to that of the female students. This was due to the different motivations that male and female students had when learning. The male students emphasized respect and status from friends and teachers resulting in competition, while female students were more concerned with participating with friends in learning and not care for status.

REFERENCES

- Arsyad, A. (2005). *Pengembangan Alat Bantu Pembelajaran*. Bandung: Rosda Karya.
- Asri, N., Soegiyanto, & Mukarromah, S. B. (2017). *Pengaruh Metode Latihan Multiball dan Koordinasi Mata Tangan terhadap Peningkatan Keterampilan Forehand Drive Tennis Meja*. *Journal of Physical Education and Sports*, 6(2), 179-185.
- Azzarito, L. & Solmon (2009). *An Investigation of Students' Embodied Discourses in Physical Education: A Gender Project*. *Journal of Teaching in Physical Education*, 28, 173-191.
- Bahagia, Y (2010) *Media dan Pembelajaran Penjas*. Bandung : FPOK UPI
- Baranek, L. K. "The Effect of Rewards and Motivation on Student Achievement" (1996). Masters Theses. 285.
- Biernat, E., Buchholtz, S., & Krzepota, J. (2018). Eye on the Ball: Table Tennis as a Pro-Health Form of Leisure-Time Physical Activity. *International Journal of Environmental Research and Public Health*, 15(4), 738. doi:10.3390/ijerph15040738
- Blanchard, C.M., Maska, L., Vallerand, R.J., de la Sablonnière, R., & Provencher, P. (2007). Reciprocal relationships between contextual and situational motivation in a sport setting. *Psychology of Sport and Exercise*, 8(5), 854-873.
- Chen, A. (2015). Operationalizing physical literacy for learners: Embodying the motivation to move. *Journal of Sport and Health Science*, 4(2), 125–131.
- Cloes, M. (2005). Research on the students' motivation in physical education. In F. Carreiro da Costa, M. Cloes & M. Gonzalez Valeiro (Eds.), *The art and science of teaching in physical education and sport. A homage to Maurice Piéron* (pp. 197-210). Lisboa: Faculdade de Motricidade Humana.
- Crosnoe, R. (2001). *The social world of male and female athletes in high school*. *Sociological Studies of Children and Youth*, 8, 89-110
- Daley, A. & O'Gara, A. (1998). *Age, Gender and Motivation for Participation in Extra Curricular Physical Activities in Secondary School Adolescents*. *European Physical Education Review*, 4, 1: 47-53 (1998).
- Dimiyati & Mudjiono. (2002). *Belajar dan Pembelajaran*. Jakarta: Rineka Cipta.
- Egli, T., Bland, H. W., Melton, B. F., & Czech, D. R. (2011). *Influence of age, sex, and race on college students' exercise motivation of physical*

- activity. *Journal of American College Health*, 59,399–406.
- Gao, Z., & Xiang, P. (2008). *College students' motivation toward weight training: An application of expectancy-value model*. *Journal of Teaching in Physical Education*, 27, 399–415.
- Gillison, F., Standage, M., & Skevington, S. (2006). *Relationships among adolescents' weight perceptions, exercise goals, exercise motivation, quality of life and leisure-time exercise behaviour: A self-determination theory approach*. *Health Education Research*, 21, 836–847
- Gonçalves, C., Silva, M. & Cruz., J. (2007). *Efeito do género, contexto de prática e tipo de modalidade desportiva sobre os valores no desporto de jovens*. *Boletim da Sociedade Portuguesa de Educação Física*, 21: 71-86.
- González-Cutre, D., Sicilia, A., & Moreno, J. A. (2011). *Un estudio cuasi-experimental de los efectos del clima motivacional tarea en las clases de educación física*. *Revista de Educación*, 356, 677-700
- Hamzah, B. Uno. (2006). *Teori Motivasi dan Pengukurannya Analisis Di Bidang Pendidikan*. Jakarta: Bumi Aksara.
- Hamzah B. Uno. 2008. *Teori Motivasi dan Pengukurannya*. Bumi Aksara. Jakarta
- Hapsari, S. (2005). *Bimbingan dan Konseling SMA Untuk Kelas XII*. Jakarta : PT Grasindo
- Helmi, B. (2016). *Penerapan Variasi Pembelajaran Untuk Meningkatkan Hasil Belajar Pukulan Forehand Drive Permainan Tenis Meja Pada Siswa Kelas V111 Madrasah Tsanawiyah Al Abraran Perumahan Terbatas Perkebunan Nusantara 11 Tandem Hilir 1 Tahun Ajaran 2015/ 2016*. *Jurnal Ilmiah Stok Bina Guna Medan*, 4(2), 65-77
- Herrero, R.; Pradas, F.; Castellar, C.; Díaz, A. *Situation analysis of table tennis as physical education content in secondary education*. *J. Sport Health Res.* 2016, 8, 245–258.
- Hidayat, Yusuf. (2010). *Psikologi Olahraga*. Bandung: CV Bintang Warliartika
- Hirdausa, H., Atiq, A., Supriatna, E. (2014). *Penerapan Metode Pembelajaran Quantum Teaching Terhadap Hasil Belajar Foucarehand Permainan Tenis Meja Dini Kota Semarang*. *Journal of Physical Education Health and Sport*, 2(1)
- Jeoung, B.J. *Relationships of exercise with frailty, depression, and cognitive function in older women*. *J. Exerc.Rehabil.* 2014, 10, 291–294
- Jumadi, R. D., Simanjutak, V. G., & Hidasari, F. P. (2017). *Pengaruh Metode Team Game Tournament Terhadap Kemampuan Hasil Servis Forehand Tenis Meja Siswa SMPN*. *Journal Pendidikan dan Pembelajaran Untan*, 6(6).
- Lauderdale, M. E., Yli-Piipari, S., Irwin, C. C., Layne, T. E. (2015) *PHYSICAL ACTIVITY Gender Differences Regarding Motivation for Physical Activity Among College Students: A Self-Determination Approach*. *The Physical Educator Vol. 72 • pp. 153–172 • 2015*
- Meece, J., Glienke, B. & Burg, S. (2006). *Gender and motivation*. *Journal of School Psychology*, 44: 351–373.
- Moreno, J. A., Cervelló, E. M., & González-Cutre, D. (2007). *Young athletes' motivational profiles*. *Journal of Sports Science and Medicine*, 6, 172-179
- Nuansari, R., Purnomo, E., & Yunitaningrum, W. (2016). *Survei Hasil Belajar Forehand, Backhand dan Smash Tenis Meja Peserta Didik SMK Negeri 3*. *Jurnal Pendidikan dan Pembelajaran*, 5(5)
- Nursalim, M, et. al. (2007). *Psikologi Pendidikan*. Surabaya: Unesa University Press
- Oemar Hamalik. 2009. *Proses Belajar Mengajar*. Bumi aksara. Jakarta
- Pairin (2013). *Meningkatkan Motivasi Siswa Dalam Pembelajaran tenis Meja Dengan Menggunakan Model Kompetisi di Kelas Viii Smp Negeri 1 Muaro Jambi*. FKIP Universitas Jambi
- Pujianto, A. (2015). *Profil Kondisi Fisik dan Keterampilan Teknik Dasar Atlet Tenis Meja Usia Dini di Kota Semarang*. *Journal of Physical Education, Health and Sport*, 2(1), 38-42.
- Reeve J. *Motivating others: nurturing inner motivational resources*. Needham Heights, MA: Allen and Bacon; 1996.
- Rolf Kretschmann, (2014). *Student Motivation In Physical Education - The Evidence In A Nutshell*. *Acta Kinesiologica* 8 (2014) 1: 27-32
- Safari, I. (2009). *Pendidikan Hasil Belajar Teknik Dasar Menggunakan Net dengan Tanpa Menggunakan Net Terlebih Dahulu*. *Eduhumaniora: Journal Pendidikan Dasar*, 1(2), 14.
- Santrock, John W. 2003. *Adolescence. Perkembangan Remaja*. Penerbit Erlangga. Jakarta
- Slameto. (2003). *Belajar dan Faktor-faktor yang Mempengaruhinya*. Jakarta: Rineka Cipta.
- Standage, M., Duda, J. L., & Ntoumanis, N. (2003). *A model of contextual motivation in physical education: Using constructs from self-determination and achievement goal*

- theoriesto predict physical activity intentions.
Journalof Educational Psychology,95,97-110.
- Sudrajat, A., Nasuka & Irawan, F. A. (2019).
*Development of ANS PONG as a Tool for Block
Training and Smashin Table Tennis Games.*
Journal of Physical Education and Sports 8 (1)
(2019) : 19 – 25
- Sutarmin, (2007), *Terampil Berolahraga Tenis
Meja*, Surakarta: Era Intermedia
- Utama. B et. al. (2004).*Kemampuan Bermain Tenis
Meja, Studi Kondisi Antara Kelincahan dan
Kemampuan Pukulan Dengan
KemampuanBermain Tenis Meja.* Laporan
Penelitian Yogyakarta: FIK UNY.
- Xu, F., & Liu, W. (2013). A Review of Middle
School Students' Attitudes Toward Physical
Activity. In L.E. Ciccomascolo & E.Crowley
Sullivan (Eds.), *The Dimensions of Physical
Education* (pp. 284-295). Burlington, MA: Jones
& Bartlett Learning.
- <https://aussietabletennis.com>

