

Effect of Personalized System for Instructions (PSI) on Physical Fitness of Senior High School nursing's student

G F Friskawati^{1*}, H Ilmawati², A Suherman³

¹STKIP Pasundan Cimahi, Jl. Permana No.32 B, Citeureup, Cimahi Utara, Kota Cimahi, Jawa Barat, Indonesia

²SMAN 1 BATUJAYA, Jl. Raya Kuta Ampel, Kabupaten Karawang, Indonesia

³FPOK, Universitas Pendidikan Indonesia, Jl. Dr. Setiabudi no 229, Bandung, Jl. Dr. Setiabudi no 229, Bandung, Indonesia

*gita032@gmail.com

Abstract. The purpose of this study is to determine the effect of Personalized System for Instructions (PSI) to the physical fitness of Senior High School nursing's student. This research used experimental methods, research design pretest-posttest control group design. A population of 233 of Senior High School nursing's student from Bhakti Kecana at Cimahi, the sample consisted of 25 students for the experimental and control groups has been taken by cluster random sampling. This research was conducted 12 meetings for 4 weeks with a number of meetings three times a week. The instruments used are Tes Kebugaran Jasmani Indonesia (TKJI). Based on the results of data processing and analysis using Paired Samples T tests can be concluded that, There is an effect of Personalized System for Instructions (PSI) to the physical fitness of Senior High School nursing's student with the significant value is 0,000. Implications of this research shows that to improve the physical fitness of the students, Personalized System for Instructions (PSI) can be used. With notes, the modules at Personalized System for Instructions (PSI) sheet should be easy to understand students.

1. Introduction

One of the objectives of the physical education in Indonesia is to reach physical fitness .Physical education and sports be implemented as part of the process of education regular and sustainable to acquire knowledge, personality, skill, health, and physical fitness. [1]. Physical fitness is one of a goals to be accomplished in the physical education at school. There are many benefits when the children have good physical fitness. It is not possible to conclude whether activity or fitness is more important for health [2]. The personal fitness, reduce their risk for chronic diseases and disabilities, or prevent unhealthy weight gain will likely benefit by exceeding the minimum recommended amount [3]. Not only for our health, Aerobic fitness and BMI were associated with achievement in reading and mathematics, whereas strength and flexibility fitness were unrelated to general academic achievement, reading, and mathematics [4]. The direction of physical education programs in schools should be presenting the learning process to improve physical fitness for students. One of which is through implementing physical education instructional models. Metzler (2005) offering Personalized System



of Instruction (PSI) to improve students physical fitness [5]. Successful use of PSI in PE has been documented for volleyball, golf, racquetball, and tennis as well as personal fitness [6].

Self-pacing on learning process in PSI model require student to make always active in every learning process. The module given by teacher for learned. If students were understand the module, so that they can do physical activity. PSI implementation on physical education are effective for health related fitness unit at the high school level. The confirmation criterion for a high rate of practice was defined as greater than 75% of class time spent on health related practice [7]. Not only that, the implement of PSI model also can improve health related fitness knowledge for student. The results from this study suggest that the PSI model could be an effective way to increase HRF knowledge with high school students while not decreasing their physical activity levels during class time [8]. This research will uncover influence of PSI learning model toward physical fitness physical fitness of Senior High School nursing's student.

Learning based student centered need to implemented starting in the learning process at physical education. Learning it will take benefits a lot for students. Students will learn motion time on, students will be able to think critically when learning, and has a sense responsibility in during learning. Student centered learning is also learning pattern in Indonesian curriculum. Therefore is required an innovation learning based student centered, one of them is learning PSI model. Characteristic of PSI learning model regardful a difference in the capacity or skill among students .PSI model grant in full to students to learn through module already made by teachers earlier. Evaluation can be done by yourself, friends and teachers.

The PSI model is a system of instruction which is person oriented. It is more emphasis on the individualization of instruction than other methods in higher education. The instruction is trailed to the need and ability of the individual learner. [9] It means, PSI learning model this is a model of instruction designed to an individual. This model is emphasized to the process individual study for senior high school. Many research that reveals the implementation of PSI learning model effective when teaching physical fitness. Participants within the PSI class demonstrated significant increases in HRF content knowledge compared to their counterparts in the control class over the course of the study [10]. The outcome consists of "Mastery learning." The student may progress to the next unit or module only when they have demonstrated mastery of the current subject. Students from the PSI course rated the overall learning of the course higher than the traditional course. However, there was no significant difference in the perception of increased workload. [11]. Personalized system of instruction (PSI) is the one of the recent innovation which has been successfully introduced in higher education to individualize instruction. This system of instruction which is person oriented [12][9]. To assist students in becoming more active during PE class, teachers need to be able and willing to provide quality instruction with appropriate instructional strategies.

PSI is effective for teaching skills in other activities, but we only examined HRF content knowledge compared to a non-PSI class. [13][8]. The "Keller Plan," as PSI is sometimes referred to, has five distinct characteristics: self-pacing, mastery learning, emphasis on the written word for learning, teacher as motivator, and the use of proctors [14][10]. PSI model offering freedom in students to select movement levels will they learn, so that the result of learning would be in line with capability owned by each student .Teachers only be motivator for each the success of students in perform a movement in accordance with landing that is in module. As mention before, that successful use of PSI in PE has been documented for student's personal fitness.

PSI is an instructional model that can promote student learning, when implemented properly. The model also provides student with many personal teacher student interaction, especially those students most in need of specific, individual support. Our results give insight into individual student differences that predict levels of effort, LTPA intentions, and behavior (between-person differences). For example, students who were, on average, higher in competence need satisfaction increased their LTPA levels more than students who were lower in perceived competence [15][12].

2. Method

This research used experimental methods, research design pretest-posttest control group design. A population of 233 of Senior High School nursing's student from Bhakti Kecana at Cimahi, the sample consisted of 25 students for the experimental and control groups has been taken by cluster random sampling. The instruments used are Tes Kebugaran Jasmani Indonesia (TKJI). The PSI model was conducted 12 meetings for 4 weeks with a number of meetings three times a week use bookwork fitness as a module. There are module in a workbook such as agility, flexibility, speed, endurance and strength. Here are the examples of PSI fitness bookwork.

3. Result

Based on to the calculation result of Paired Samples Test on table 1 about the effect of Personalized System for Instructions (PSI) to the physical fitness of Senior High School nursing's student can see that $P = 0,000 < 0,05$ it means that H_0 is rejected and H_1 is accepted. So, there is an effect of Personalized System for Instruction (PSI) through the physical fitness of Senior High School nursing's student. Based on to the calculation result of Paired Samples Test on table 1 about the effect of conventional model (PSI) to the physical fitness of Senior High School nursing's student can see that $P = 0,001 < 0,05$ it means that H_0 is rejected and H_1 is accepted. So, there is an effect of conventional model through the physical fitness of Senior High School nursing's student. Base on result of independent test for difference between PSI model & conventional model show that $P = 0,000 < 0,05$, so the result show that there is difference of physical fitness between between PSI model & conventional model. See table 1 and table 2.

Table 1. The Result of Paired Samples Physical Fitness
Paired Samples Test

	Paired differences					T	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Pair 1 Pretest and posttest	2.040	1.020	0.229	0.541	0.765	0.89	24	0.000
Pair 2 Pretest and posttest	1.520	0.653	0.241	0.432	0.349	0.955	24	0.001

Table 2. The Results of Independent Sample Test PSI Model & Conventional Model
Independent Samples Test

KJ Equal variances	Levene's Test for Equality of Variances		t-test for Equality of Means						
	F	Sig.	T	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Assumed	1.47	0.230	6.546	48	0	1.560	0.238	1.081	2.039
Not assumed	8		6.546	41.406	0	1.560	0.238	1.081	2.041

4. Discussion

The type of PSI model is students can do activity with the intensity of that has been specified in the module. In addition students can also on the monitoring of the own level fitness by means of evaluation or helplessly with friends. Steps place between the presenting PSI learning models. First, teacher give a module to the student; second, every student read carefully and try to understand the module. Third, student can do activity from the module directly. PSI get its name from the fact that each student is served as an individual by another person face to face and one to one in spite of fact that the class may contain number of students. It is suitable for courses for the student is expected to acquire a well-defined body of knowledge or skill [16][9]. Within these modules, student can acquire knowledge of physiological responses of the body to these type of training, as well as how to apply the FITT principle and program design to their training program [17][13]. When student learn physical education with PSI module, so they will learn in own. Based on finding, students will be better understand module if the module specify details from rules and the activity to be done by students.

In the conventional learning model, teaching based teacher centered are more dominant Students will do all instruction given by teachers .But , learning conventional model not giving understanding about knowledge material fitness corporeal on students. The results indicate that the PSI model could be an effective way to increase HRF knowledge with high school students. This study shows no significant differences in class time PA between the PSI and traditional model, indicating that through the use of PSI, students can increase their knowledge while maintaining current activity levels [18][14]. PSI earning model grant more for students learning to independently. When the children aware of physical fitness, the more easily in understanding matter in module.

5. Conclusion

Based on the results of processing and analysis data, the research conclude that there is an effect of Personalized System for Instruction (PSI) through the physical fitness of Senior High School nursing's student. According to the research, learning step, rules and how to make self or peer evaluation on the module of PSI model have to easy to understand for student. Sample of this research only Senior High School nursing's student which several of that is girls. It's one of such a lack of this research that the sample have to balance for girls and boys to see the difference of physical fitness among them. The Health Related Fitness (HRF) knowledge is also have to consider to see related with physical fitness in PSI model.

6. Acknowledgment

Special thank are given to Hilda Ilmawati, M.Pd and Prof. Adang Suherman, MA as a partner research. Mr. Asep Aep I, S.Pd, S.Kep, Ners. As a head master of Bhakti Kencana School for giving

permission to held this research, and also students of Senior High School nursing's at Bhakti Kencana School.

References

- [1] UU RI No. 3 thn. 2005 Tentang Sistem Keolahragaan Nasional, Bab 1 Pasal 1.
- [2] Steven N B, Yiling C and J. Scott Holder 2001 Is physical activity or physical fitness more important in defining health benefits? *American College of Sports Medicine Journal Proceedings* for this symposium
- [3] Christine Hancock 2011 *The benefits of physical activity for health and well-being* United Kingdom: C3 Collaborating for Health is a registered charity.
- [4] Darla M Castelli, Charles H. Hillman, Sarah M. Buck and Heather E. Erwin 2007 Physical fitness and academic achievement in third- and fifth-grade students *Journal of Sport & Exercise Psychology* **29**(2) 239-252
- [5] Metzler, W Michael 2005 *Instructional models for physical education* USA: Allyn & Baco P 188
- [6] Pritchard T, Penix K, Colquitt G and McCollum S 2012 Effects of a weight training personalized system of instruction course on fitness levels and knowledge *The Physical Educator* **69** 342–359.
- [7] Hannon, Conrad J, Holt, J Brett and Hatten D Jhon 2008 Personalized system of instruction model: teaching health related fitness content in high school physica education *Journal of Curriculum and Instruction (JoCI)* **2** (2) 20-33
- [8] Steven L Prewitt, James C Hannon, Gavin Colquitt, Timothy A Brusseau, Maria Newton, Janet Shaw 2015 Effect of personalized system of instruction on health-related fitness knowledge and class time physical activity *The Physical Educator Journal* **72** 23-39.
- [9] Kalaivani A 2014 Personalized system of instruction (Psi Method) for innovative teaching methods and techniques *International Journal of Pharmaceutical Science Invention* ISSN (Online): 2319 – 6718 28-30
- [10] Steven L Prewitt, James C Hannon, Gavin Colquitt, Timothy A Brusseau, Maria Newton and Janet Shaw 2015 Effect of personalized system of instruction on health-related fitness knowledge and class time physical activity *The Physical Educator Journal* **72** 23–39
- [11] Ocorr K and Osgood M P 2003 Self or help? a comparison of a personalized system of instruction biochemistry class to a standard lecture-based biochemistry class. *The International Union of Biochemistry and Molecular Biology* **31**(5) 308-312
- [12] Ian M Taylor, Nikos Ntoumanis, Martyn Standage and Christopher M Spray 2010 Motivational predictors of physical education students' effort, exercise intentions, and leisure-time physical activity: a multilevel linear growth analysis *Journal of Sport & Exercise Psychology* **32** 99-120
- [13] Colquit, Gavin, Pritchard, Tony and Mccollum Strarla 2011 The personalized system of instruction in fitness education *Journal of Physical Education, Recreation & Dance* **82**(6) 45-49
- [14] Prewitt S L, Hannon J C, Colquitt G, Brusseau T A, Newton M and Shaw J 2015 Effect of personalized system of instruction on health-related fitness knowledge and class time physical activity. *The Physical Educator* **72** 23-39
- [15] Taylor I M, Ntoumanis N, Standage M and Spray C M 2010 Motivational predictors of physical education students' effort, exercise intentions, and leisure-time physical activity: a multilevel linear growth analysis *Journal of Sport and Exercise Psychology* **32**(1) 99-120
- [16] Green Jr B A 1976 The personalized system of instruction or should university teaching be improved? *Programmed Learning and Educational Technology* **13**(1) 8-12
- [17] Basdogan C, Sedef M, Harders M and Wesarg S 2007 VR-based simulators for training in minimally invasive surgery *IEEE Computer Graphics and Applications* **27**(2)

- [18] Hwang A and Arbaugh J B 2009 Seeking feedback in blended learning: competitive versus cooperative student attitudes and their links to learning outcome *Journal of Computer Assisted Learning* **25**(3) 280-293