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The Basic Design of Physical Education Instructional Model Based on Self-Regulated Learning Approach

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ABSTRACT: *The purpose of this research was to produce a basic design model of physical education instructional based on Self-Regulated Learning approach. The research was carried out using qualitative and quantitative methods on thirty Elementary School students (M = 11.2) and physical educators in Bandung city, as well as some experts from the School of Physical Education and Health Education of UPI (Indonesian University of Education) as samples. The data were gathered using the techniques of document analysis, questionnaires, observation, depth interview, and focus group discussion. The result of this research was a compilation of a basic design model of physical education instructional for Elementary School based on Self-Regulated Learning approach. Generally, physical education instructional condition in the Elementary School is good enough; it is indicated by the feasibility level of 68%. However, there are four primary problems faced by physical educators, such as instructional facility, equipment, time allocation, and students engaging in instructional activities. The instructional model has been used by Elementary School physical educators is sport education instructional model.*
KEY WORDS: *Instructional model, physical education, self-regulated learning, Elementary School, and physical educators.*

Introduction

The ultimate aim of physical education instructional is personality development as a whole, such as physical, mental, emotional, social, as well as spiritual aspects through guided, selected, and systematic-methodic physical activity participation based on health and social norms. M.H. Barrow (1983) called it "Physically-Educated Person". The most important thing was the application of instructional model can be learned by students to be more independent, responsible, and motivated toward achievement goal. At present time, the instructional model emphasizes on technical and focuses on behaviorist approach. Students were treated as passive, where the live process determined to external factors. Besides that, the development of material used in some books more concentrates on development of psychomotor aspect, whereas cognitive and affective aspects still ignored.

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The use of self-regulated learning approach in physical education instructional is regarded very important; it is because the self-regulated learning is a basic foundation for long-life learning process which offers instructions to control mind, attitude, and behavior of students to reach the instructional goal (Zimmerman, 1989; and Smith, 2001). Self-regulated learning constitutes an instructional approach based on social cognitive theory, and it emphasizes on interaction among personal, behavioral, and environmental factors (Bandura, 1997). Those factors give mutual effects and it is called triadic reciprocality theory (Zimmerman, 1989; Schunk & Ertmer, 1999; and Kuiper, 2002).

Based on short illustration above, this research is very important, especially for instructional model that will be developed based on cognitive, motivational as well as behavior approach. By using this model, the students were expected to be more independent, responsible, and motivated to learn. Besides that, it also supports the teacher to be more creative and innovative in developing instructional media.

Instructional Model and Self-Regulated Learning Approach

Model is a set of procedure to form a certain process. The instructional model defined as a conceptual design which describes systematic procedure in organizing learning experience to attain certain instructional goal (Joyce & Weil, 1980). Meanwhile, B. Sells and Z. Glassgow (1990) pointed out that the models of instructional were compiled by several interrelated and cooperative components.

There are several models of instructional developed and used in instructional process. Some of them are: *Direct Instructional Model* (DIM); *Personalized System for Instruction Model* (PSIM); *Cooperative Instruction Model* (CIM); *Sport Education Instruction Model* (SEIM); and *Tactical Games Model* (TGM). Those instruction models were developed using different goals and foundations, and have different implication.

Self-regulated learning constitutes a learning strategy. It has been developed from A. Bandura's triadic theory of social cognition (Zimmerman, 1989; Zimmerman & Martinez-Pons, 1990; and Kuiper, 2002). According to this theory, human being is a result of the interdependent causality structure from behavioral, personal, and environmental aspects (Bandura, 1997). Furthermore, A. Bandura pointed out that all the three factors influenced self-regulated learning, in which, (1) a person try to regulate itself; (2) its result in the form of action or behavior; and (3) gives effect on environmental change, and so on. In that process, every aspect is interdependent, therefore, self-regulated learning constitutes a learning activity that engage student's metacognition, motivation, and behavior aspects. The students using these aspects in implementing their learning activities will be more independent, responsible, and motivated person. Generally, they will responsible toward their learning activities, due to their awareness that only by making effort themselves, the goal of learning will be achieved.

As a learning strategy, self-regulated learning constitutes action plan that illustrates what happen in instructional process. The action plan compiled and directed to learning orientation as a mental thinking framework. It guides and determines thinking process or the student's ways to interpret and response achievement situation that are manifested in form of performance or skills acquisition (Brett & VandeWalle, 1999; and Barron & Harrackiewicz, 2001). The instruction principle of self-regulated learning is instructing the student in order to be more independent, responsible, and motivated to achieve the learning goal stated.

Methods: Research Approach and Procedure, Subjects, Instruments and Data Gathering, and Data Analysis Technique

Research and Development (R&D) approach was used in this research (Borg & Gall, 1979). The whole process of this research and developmental materials devided into three phases. From preliminary survey of possibility model design will be developed, tested, revised, product retested, and taken into experiment that will be done within two years. At the first phase (2008), research process conducted using qualitative as primary method and quantitative as supporting method.

W.R. Borg and M.D. Gall, in their book *Educational Research: An Introduction* (1979), stated that four phases should be conducted in Research and Development, namely preliminary survey, compiled pre-design development of model, try-out, model validation, and disemination. Therefore, this Research and Development will referred to those phases.

The first two phases, namely preliminary survey and compiled pre-design development of model, held in the first year (2008). Based on those both phases, the researcher decided three steps to conduct, that is: (1) field study by questionnaire, depth interview, and focus group discussion; (2) literature study; and (3) compiled model basic design of instructional will be developed based on self-regulated learning approach.

The subjects of this research were: (1) Practitioners consist of fourty physical educators in Bandung city; (2) The thirty six grade students of Elementary School in Astana Anyar, Bandung; and (3) two experts of physical education from the School of Physical Education and Health Education of UPI, *Universitas Pendidikan Indonesia* or Indonesian University of Education.

Instruments used in qualitative method were researchers themselves. It is because of human is primary instrument in qualitative research and has competence to do self-adjustment with reality spectrum that cannot be done by non-human instrument, and data gathered by observation, depth interview, and focus group discussion techniques.

There were five data gathering techniques used in this research, they are questionnaire, scale, observation, depth interview, and focus group discussion. The questionnaire distributed on August 28th through September 12nd, 2008. Depth

interview was carried out on Saturday, August 29th, 2008 at 4 to 5.30 pm toward six physical educators of Elementary School. Observation conducted on Saturday, September 6th, 2008, followed by interview on Saturday, September 9th, 2008 toward 30 students of Elementary School, and finally focus group discussion involved 11 persons consisting of 6 physical educators, 3 experts of physical education from FPOK UPI (School of Physical Education and Health Education of UPI, *Universitas Pendidikan Indonesia* or Indonesian University of Education), and 3 researchers.

Trend of instructional models used by Elementary School physical educators' questionnaire. It was developed base on M.W. Metzler's instruction model dimensions and components. Five instructional models in physical education that used by Elementary School physical educators are Direct Instruction, Personalized System for Instruction, Cooperative Instruction, Sport Education, and Tactical Instruction (Metzler, 1999).

Physical education instruction feasibility scale. Development of this scale based on DAPE (Developmentally Appropriate Physical Education) rating scale practice for children developed by Council on Physical Education for Children. It consists of 24 feasibility indicators, and the reliability coefficient of this scale was 0.729. The development of both instruments in order to explore of conditions of physical education instruction in Elementary School.

Data analysis technique used was qualitative method developed by A. Kitsantas, B.J. Zimmerman and T. Cleary (2000) and P.A. Smith (2001). The phases consist of: (1) data organization; (2) coding and analysis of data; and (3) conclusion or verification and interpretation. The analysis was done by content analysis, i.e. a technique to analyze content of a document as data resource (Borg & Gall, 1979); and inductive analysis applied to some special things that have similarity elements to get general conclusion. Furthermore, the percentage analysis technique was used to analyze quantitative data.

Research Result

Generally, the implementation level of the physical education instructional in Elementary School was 68%. There were four primary problems faced by Elementary School physical educators, that is: instructional facility (30.3%), equipment (39.0%), time allocation (45.0%), and students engaging in instructional activities (46.3%). The instructional model that has been used by Elementary School physical educators is sport education instructional model.

In the present study, we found the empirical data of six types of learning strategy, seven types of management strategy, and four types of knowledge about learning. The seven learning strategies that were effectively used in the natural physical education context were: (1) formulating the goal setting, (2) listening to instruction, (3) thinking and understanding, (4) looking and imitating, (5) visualizing and imaging, (6) paying attention, and (7) repeating and training. Furthermore, there were seven management strategies that emerged from the data including: (1) managing attention, (2) seeking help, (3) managing the task and adjusting difficulty,

(4) managing time, (5) reducing peer interaction, (6) managing motivation, and (7) getting self evaluation. The research also found four types of knowledge about learning, they were: (1) knowledge related to itself, (2) knowledge of learning strategy, (3) knowledge of situation, and (4) knowledge of other people.

Based on data analysis resulted from questionnaire, observation, depth interview, and focus group discussion, a model basic design of physical education instructional model in Elementary School based on self-regulated learning approach has been compiled and developed, as seen in figure in the below:

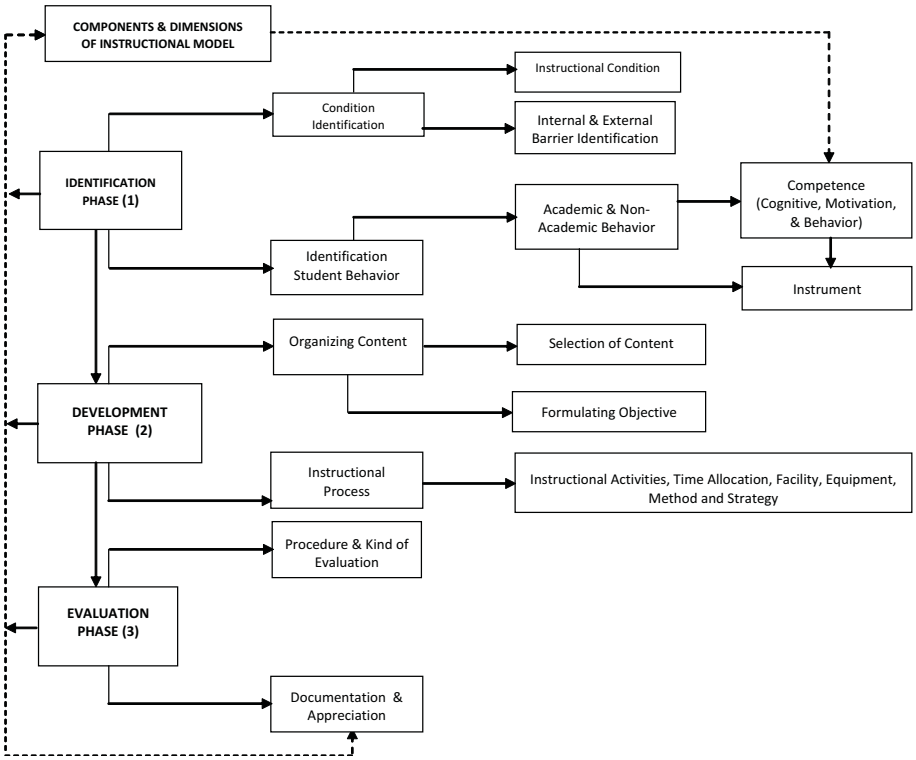

Figure 1:
The Design of Physical Education Instructional Model
at Elementary School Based on Self-Regulated Learning Approach

According to figure 1, MPEIS-CCA development procedure consists of three phases. *First*, Identification of instructional condition, consist of three steps of activity: (1) Identification of instructional feasibility and problems faced by physical educators; (2) Formulating general instructional objective; and (3) Identification of student behavior characteristic. *Second*, Instructional Development Phase, consist

of two steps of activity: (1) Material organization process; and (2) Development of instructional process. *Third*, Evaluation Development Phase, consist of two steps of activity: (1) Deciding procedure and kind of test; and (2) Deciding system of documentation and appreciation.

Discussion

In general, the condition of physical education instructional in the Elementary School is good enough; it showed the feasibility level of 68%. However, there were four primary problems faced by physical educators, that are instructional facility (30.3%), equipment (39.0%), time allocation (45.0%), and students engaging in instructional activities (46%). These problems can be a barrier for physical educators to bring about successful instructional process (Singer & Gerson, 1979). These problems can also cause some problems, especially related to planning arrangements. Physical educators reluctant to arrange instructional planning due to the limitation of facility, equipment, time allocated was unorganized well. Finally, the student's engagement in instructional process is not optimum.

It also found that the instructional model used by Elementary School physical educators is sport education instructional model. This tendency indicates that instructional process at present time emphasizes more on development of psychomotor aspect and sport skill acquisition, whereas cognitive and affective aspect developments were still ignored.

The identification and application of the components and sub-components of self-regulated learning strategies employed by students in a natural physical education setting give illustration of various factors that influence students' engagement in instructional process, metacognitive, motivation, and behavior as well. In other words, effectively of physical educators to conduct instructional process depends on what the students know, think, and do while participating in physical education lessons. Hence, understanding the factors that influence how the students engage actively in the learning process becomes very significant, where those factors are the student's ability to employ self-regulated learning towards the achievement of learning goals. The study showed that self-regulated learning constitute one of the factors that influence motor performance and learning (Singer, Lidor & Cauraugh, 1993; and Schunck & Zimmerman, 1996).

Learning strategies indicated how the students select or process information presented in lessons. They have seven sub-components and the result of this study support the previous researches, for example, *listening to instruction* (Dansereau *et al.*, 1979; Dansereau, 1985; and Zimmerman & Martinez-Pons, 1986); *thinking and seeking understanding* (Singer & Gerson, 1979; and Weinstein & Mayer, 1986); *looking and imitating* (Kitsantas, Zimmerman & Cleary, 2000); *visualizing* (Singer & Gerson, 1979); *focusing attention* (Singer & Gerson, 1979; and Singer & Caraugh, 1985); and *repeating and training* (Weinstein & Mayer, 1986; and Zimmerman & Martinez-Pons, 1986).

Management strategies in learning are supporting strategy related to self-regulated process. This strategy relates to how the students organize the learning situation and how the students facilitate information processing. It has seven sub-components and the result of this study supports the previous researches, for example, *to manage concentration* (Dansereau, 1985; Singer & Cauraugh, 1985; and Weinstein & Underwood, 1985); *to seek help* (Zimmerman & Martinez-Pons, 1986; and Gernigon, Longueville & Debove, 1999); *to manage the task and to adjust its difficulty* (Weinstein & Underwood, 1985; and Zimmerman & Martinez-Pons, 1986); *to manage time* (Judd, McCombs & Dobrovolly, 1979; Singer & Gerson, 1979; and Son & Metcalf, 2000); *to manage motivation* (Dansereau *et al.,* 1979; and Boulet, Savoie-Zajc & Chevrier, 1996); and *to make self-evaluation* (Singer & Gerson, 1979; Dansereau, 1985; and Zimmerman & Martinez-Pons, 1986).

The knowledge of learning component represents general information that describes the student's knowledge about how to learn. The observation identified four sub-components of learning that is knowledge of self, strategy, contexts, and other person. Those components are the same as the previous research conducted by C.E. Weinsten and L.M. Hume (2001); they found 5 components of knowledge about learning, such as knowledge of strategies, content, contexts, tasks, and individual.

In connection with instructional process, the three components of self-regulated learning above must be used as basic principle for physical educators. As described in this study, the use of self-regulated learning can increase student's learning and performance. Teachers should support the students to apply all the three components during the instruction process of physical education. The study proved that it is very effective to increase student's performance and learning.

The instructional model design of physical education underlying self-regulated learning approach is a systematic plan of identification of condition and instructional objective, content, process, strategy, and method. It also empowered the supporting facilities, learning resources available, and evaluation system to achieve instructional objective systematically that conformed to self-regulated learning approach. It is expected that the instructional model design can be employed by physical educators in the elementary school as one of various instruction models conform to the available curriculum.

According to concept of self-regulated learning approach*,* physical education program in the Elementary School should be applied as an instructional model to make the students to be more independent, responsible, and motivated to achieve the learning objective. The students that engaged metacognitive, motivation, and behavior actively during instruction process should apply three components of self-regulated learning–learning strategy, management strategy, and knowledge about learning. In its implementation, students will apply those components by three kinds of physical education self-regulation models–verbal information, associated with nonverbal information, training and repeating models.

Conclusion and Suggestion

Generally, physical education instructional condition in the Elementary School is good enough; it is indicated by the feasibility level of 68%. However, there are four primary problems faced by physical educators, such as instructional facility, equipment, time allocation, and students engaging in instructional activities. The instructional model has been used by Elementary School physical educators is sport education instructional model.

There were three components strategies of instructional self-regulated learning employed by students in a natural physical education setting, i.e. learning strategies, management strategies, and knowledge about learning. The all three components elaborated to 18 sub-components. They are 7 sub-components for learning strategies: formulating goal setting, listening to instruction, thinking about and seeking understanding, looking and imitating, visualizing and imaging, paying attention, and repeating and training. The 7 sub components for management strategies are managing attention, seeking help, managing the task and adjusting the difficulty, managing time, reducing peer interactions, managing motivation, and making self-evaluation. Furthermore, there are four sub-components of knowledge about learning that is knowledge of himself or herself, strategies, situation, and other person.

The research has already compiled and developed a model basic design of physical education instructional in the Elementary School based on self-regulated learning approach. This model was expected to be used by physical educators in the Elementary School as one alternative model of instructions based on the available current curriculum.

Based on the result of this research, it is important to perform continuation research, an evaluative research of this basic design model toward larger subjects. To get standard model, the hypothetic model shall be tested by experimental research, and disseminated model in order that the model can be used nationally by elementary school physical educators.

References

Bandura, A. (1997). *Self Efficacy: The Exercise of control*. New York: W.H. Freeman and Company.

Barrow, M.H. (1983). *Man and Movement Principles of Physical Education: Physical Education and its Philosophic Bases.* Philadelphia: Lea & Febiger.

Barron, K.E. & Harrackiewicz. (2001). "Achievement Goals and Optimal Motivation: Testing Multiple Goal Models" in *Journal of Personality and Social Psychology*, 80(5), pp.706-722.

Brett, J.F. & D. VandeWalle. (1999). "Goal Orientation and Goal Content as Predictors of Performance in a Training Program" in *Journal of Applied Psychology,* 84(6), pp.863-873.

Borg, W.R. & M.D. Gall. (1979). *Educational Research: An Introduction.* New York: Longman Inc., 3rd edition.

Boulet, A., L. Savoie-Zajc & J. Chevrier. (1996). *Learning Strategies at University.* Sainte For, Canada: University Press.

Dansereau, D.F. *et al*. (1979). "Evaluation of Learning Strategies System" in J.R. O'Neil & C.D. Spielberger [eds]. *Cognitive.* London, UK: Academic Press, pp.3-43.

Dansereau, D.F. (1985). "Learning Strategy Research" in J. Segal [ed]. *Thinking and Learning Skill.* Hillsdale, NJ: Lawrence Erlbaum, pp.209-239.

Gernigon, C.D., F.A. Longueville & V. Debove. (1999). "Effect of Learning Context and Gender on Help-Seeking: Situational Indices of Achievement and Motor Skill Acquisition" in *Journal of Sport and Exercise Psychology,* pp.21-48.

Joyce, B. & M. Weil. (1980). *Models of Teaching.* New Jersey: Prentice-Hall, Inc.

Judd, W.A., B.L. McCombs & J.L. Dobrovolly. (1979). "Time Management as a Learning Strategy for Individualized Instruction" in J.R. O'Neil & C.D. Spielberger [eds]. *Cognitive and Affective Learning Strategies.* London, UK: Academic press, pp.133-173.

Kermarrec, G., J.R. Todorovich & D.S. Fleming. (2004). "An Investigation of the Self-Regulation Component Student Employ in Physical Education Setting" in *Journal of Teaching in Physical Education,* 23(2), pp.142-152.

Kitsantas, A., B.J. Zimmerman & T. Cleary. (2000). "The Role of Observation and Emulation in the Development of Athletic Self-Regulation" in *Journal of Educational Psychology,* 92(4), pp.811-817.

Kuiper, R.A. (2002). "Enhancing Metacognition Through the Reflective Use of Self-Regulated Strategies" in *The Journal of Continuing Education in Nursing,* 33(2), pp.78-92.

Metzler, M.W. (1999). *Instructional Models for Physical Education.* Boston: Allyn and Bacon.

Schunck, D.H. & B.J. Zimmerman. (1996). "Modeling and Self-Efficacy Influence on Children's Development of Self Regulation" in J. Juvonen & K.R. Entzel [eds]. *Social Motivation: Understanding Children's School Adjustment.* New York: Cambridge University Press, pp.154-180.

Schunk, D.H. & P.A. Ertmer. (1999). "Self-Regulatory Process during Computer Skill Acquisition, Goal, and Self-Evaluative Influences" in *Journal of Educational Psychology*, 91(2), pp.251-260.

Sells, B. & Z. Glassgow. (1990). *Exercise in Instructional Design.* Columbus: Merril Publishing Company.

Singer, R.N. & R.F. Gerson. (1979). "Learning Strategy, Cognitive Processes, and Motor Learning" in J.R. O'Neil & C.D. Spielberger [eds]. *Cognitive and Affective Learning Strategies.* London, UK: Academic Press, pp.215-247.

Singer, R.N. & J.H. Cauraugh. (1985). "The Generalizability Effect of Learning Strategies for Categories of Psychomotor Skill" in *Quest,* 37, pp.103-119.

Singer, R.N., R. Lidor & J.H. Cauraugh. (1993). "To be Aware or Not Aware? What to Think about While Learning and Performing a Motor Skill" in *The Sport Psychologist,* 7, pp.19-30.

Smith, P.A. (2001). "Understanding Self-Regulated Learning and its Implication for Accounting Educators and Researchers" in *Issues in Accounting Education,* 16(4), pp.663-689.

Son, L.K. & J. Metcalf. (2000). "Metacognitive and Control Strategies in Study-Time Allocation" in *Journal of Experimental Psychology, Learning, Memory, and Cognition*, 26(1), pp.204-221.

Weinstein, C.E. & V. Underwood. (1985). "Learning Strategy: The How to Learning" in J.W. Segal *et al*. [eds]. *Thinking and Learning Skills.* Hillsdele, NJ: Erlbaum, pp.240-259.

Weinstein, C.E. & R.E. Mayer. (1986). "The Teaching of Learning Strategies" in M.C. Wittrock [ed]. *Handbook of Research on Teaching.* Hillsdele, NJ: Erlbaum, pp.315-327.

Weinsten, C.E. & L.M. Hume. (2001). *Strategies to Acquire for a Long Time*. Ruxelles, France: DeBoeck.

Zimmerman, B.J. & M. Martinez-Pons. (1988). "Construct of a Strategy Model of Student Self-Regulated Learning" in *Journal of Educational Psychology,* 80(3), pp.284-290.

Zimmerman, B.J. (1989). "Social Cognitive Views of Self-Regulated Academic Learning" in *Journal of Educational Psychology*, 81(3), pp.329-339.

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