

LITERATURE REVIEW ON THE IMPLEMENTATION OF "SOP" WORK PROCEDURES FOR VALID AND RELIABLE PHYSICAL ABILITY TEST RESULTS

Samsul Arifin, Zamroni, Bambang Subali

Graduate School, Yogyakarta State University, Yogyakarta, Indonesia

[Review article](#)

Abstract

The purpose of this literature review is to identify physical ability test procedures to produce valid and reliable tests. The test procedure governs the steps or procedures, relationships between people involved in the work system and assessment. Test procedures generally contain how the planning of a test will be carried out, what and how the activities carried out by testers and testes during carrying out physical ability tests and how to conduct a final assessment or evaluation to decide on a test result. The results of the literature review indicate that in each completion of the work including the physical abilities test it is necessary to have a standard test procedure to be used as a guide for testers and testes in carrying out physical ability tests. To produce valid and reliable measurements and assessments, the absolute tester must follow all instructions, steps, and procedures and must not reduce or even eliminate some of the procedures that have been set.

Keywords: work procedures, physical ability test, valid, reliable

INTRODUCTION

In the age of technology developing very quickly requires reliable human resources that are able to adjust to the demands of the times. All work processes are neatly arranged in a system that allows work to be completed quickly, efficiently, and correctly. The methods needed to handle future activities, the sequence of steps to achieve certain goals and guidelines for acting or carrying out activities are called standard operating procedures or better known as SOPs. (Nuraida, 2008). Whatever is in the SOP, everything leads to a situation and standardized action. According to Freitas, et.al (2016), The best way to start standardization is through understanding all the mechanisms involved in a process that ultimately can minimize the occurrence of irregularities in the implementation of daily tasks and can carry out activities with the right process. Standardization is understood as building a single way to carry out an activity or task that is to develop and implement technical standards. An SOP guarantees customers that, whenever they go to a particular place of business, action will be taken to ensure that the quality of service is the same, regardless of day or time.

Standard operating procedures (SOP) are detailed instructions outlined to achieve homogeneity when performing certain functions (Barbosa et.al, 2011). SOPs are mandatory instructions to carry out operations correctly and always in the same way. Meanwhile, according to Wursanto (1987), the procedure is interpreted as a plan because it contains the selection of a way of acting and applies to activities in the future, not only a guide for thinking but also a way to act and carry out an activity. Meanwhile, according to Cook

(1998), SOP is a set of written instructions that document routine or repetitive activities that are followed by an organization. is an integral part of a successful quality system because it provides individuals with information to do the job right, and facilitates consistency in the quality and integrity of the product or end result. Freitas, et.al., (2016) states that in Japan the SOP has implemented a form of four cycles known as PDCA, which stands for "Plan", "Do", "Check", "Act". "Plan" refers to strategic planning and organizational quality taking into account customer satisfaction. "Do" matches the definition of the process, its priorities, and standardizes routines through documentation. "Check" deals with the development of indicators and data analysis. "Act" mentions verification of process conditions and taking corrective and preventive actions. SOPs must be written in a clear, objective and detailed manner so that there is uniformity in a procedure that makes work can be carried out more smoothly, which results in faster, more efficient completion times and makes it easier in terms of supervision and control (Maryati, 2014).

In connection with the procedure on physical ability tests, there are currently not a few physical abilities tests that only explain how to carry out test movements without explaining how to organize individuals involved in both the tester and the teste, prepare administration and so on so that problems in the field may arise. In a physical ability test, it is very necessary a procedure as a guide in implementation. Organizing the individuals involved both the tester and the test, the measurement procedures, their assessment, all refer to the procedures that have been made. The tester will be able to

measure and assess well and produce reliable and accurate test result data, one of which is influenced by the ability of the tester to master the test procedures. Winnick & Short (2014), states that the tester must not assume that general assessment standards cannot be achieved by certain participants in carrying out physical abilities tests. Without a tester who is experienced and mastered the procedures, test results can be misleading and thus produce wrong employees which can cause damaging results in the long run. The test must be carried out according to standard procedures and the tester is encouraged to pursue common standards. Every test or procedure used to measure employment and qualifications and interests related to one's career can be considered as a personnel assessment tool such as for the selection, placement, promotion, career counseling, or training (U.S. Department of Labor Employment and Training Administration, 2000). Marriott, et.al. (2011) in his study stated that procedure-based assessment (PBA) had proven reliability as a method for assessing participants' procedural skills in operations for three years. Thus the availability of good procedures in a physical ability test will be able to produce an accurate assessment of people who do the test.

Definition and Concept of Standard Operating Procedures (SOP)

Standard Operating Procedure (SOP) is a process document that explains in detail how the operator must perform the given operation. According to Akyar (2012), SOP involves the purpose of operations, equipment, and materials needed, how to make the necessary arrangements and operations for the process, how to carry out maintenance and stoppage operations carried out by workers, description of safety problems, shooting problems, list of spare parts and where to find it. The SOP is one of the many process documents required for consistent implementation of the process, material specifications, and so on ... Jain, SK. (2008) states that SOP is a living document that writes instructions in detail and in full that explains specific steps to be followed in all specified activities. A collection of instructions that include operating methods that are suitable for definite and efficient procedures are characteristic of SOPs. The use of SOP is the achievement of standardization in the implementation or completion of a particular work and to determine the steps and procedures required. Regarding standardization, SOPs are written instructions and procedure notes that are approved and adopted as standard practice (Cardiff University, 2009). The SOP is a mandatory instruction that must be obeyed and implemented.

The aim of the SOP is to ensure that all workers perform to achieve the task with and always in the same manner, which is necessary for the conditions in order to get the expected results from the process. The SOP also establishes procedures for preparation, approval, distribution, alteration, and storage (Cardiff University, 2009). SOP explains matters relating to the purpose of activity/task, how it is implemented, the scope of use, who is doing and is responsible and how the task should be carried out. All matters related to the completion of tasks and routine activities must be documented in an SOP.

The benefit of having an SOP is to be able to minimize differences and improve quality through processes or procedures within an organization that is constant and stable, even if there are personnel changes that are temporary or permanent. According to Jain, SK. (2008), the benefits of SOP are (1) providing information to do work regularly for individuals and all people and include safety, health, environmental and functional information needed to do the job properly, (2) guarantee that production operations are carried out constant to get quality control of processes and products, (3) guarantee that the process continues without interruption and is completed on time, (4) ensures that no failures occur in the manufacturing process and others that will endanger anyone in the surrounding community, (5) guarantee that recognized procedures are followed in accordance with regulations, (6) serves as a training document to teach users about SOPs, (7) functions as a checklist for coworkers and auditors who observe performance to strengthen appropriate performance, (8) functions as an archive of records of how, why and when the steps in the process are there The material for revising these steps when a process or equipment is changed, and (9) serves as an explanation of the steps in a process for investigative purposes. Furthermore, Mulyadi (2008) states that a procedure can provide the following benefits: (1) makes it easier to determine the steps of future activities, (2) changing repetitive work to be routine and limited so as to simplify the implementation and henceforth work only as necessary, (3) there is a clear guidance or work program and must be obeyed by all implementers. (4) assist in efforts to increase work productivity that is effective and efficient, (5) prevent deviations and facilitate supervision, if deviations occur, improvements can be made immediately as long as in their respective duties and functions.

Design and Prepare Standard Operating Procedures

The plan of action that is designed is to direct and determine the decisions and actions in a task. The procedure is a form of policy that can guide decision making in the form of more detailed guidance on the steps that must be followed, the sequence of steps in implementing organizational policies in specific situations that are repeated (the United States Environmental Protection Agency 2001). The SOP is used as a control to verify whether the actions taken are in accordance with the plan determined through monitoring for system weaknesses, human error, and deviations from the established path and touch all aspects namely people, actions, objects, and time (Akyar, 2012). The existence must be in accordance with an organization or institution taking into account the conditions of the region, capabilities, and limitations that exist. Unwritten directives are difficult to learn, remember and apply. The written form of SOP will eliminate the effort to try to guess what will happen next or chance. This is consistent with what Cook (1998) also said that SOPs must be able to describe basic programmatic actions, technical actions such as analytical processes, calibration, and equipment use. Standard operating procedures must be followed. Knowing and following SOPs helps individuals and groups get used to the good and right ways of working. The SOP must be officially issued by an organization or institution and members must know and understand. The assumption is that institutional responsibility can be reduced or avoided if an institution has procedures. This is in accordance with the SOP guidelines issued by Iowa State University (2010) which contain that the details in the SOP standardize the process and support step-by-step instructions that allow anyone in your operation to carry out tasks consistently. SOPs that are used as official guidelines of an organization or an institution can be used as part of a personnel training program because SOPs contain detailed work instructions so as to minimize opportunities for miscommunication, misunderstanding, misinterpretation and guaranteed completion of a task. In audit procedures and in reconstructing project activities when there are no other references that can be accessed the existence of SOP is very important to deal with it.

There is no one correct format and internal formatting will vary according to each organization and the type of SOP created. The general format of an SOP should divide information wherever possible into a series of logical steps to avoid a long list. A procedure can be described in a concise and clear manner, not wordy with simple and easy language, does not cause ambiguity and must instruct the tasks that

must be performed in certain situations. Frank (2010), states that SOPs must be written in a step-by-step format, easy to read, if there are steps outside the specified instructions, it must be documented including who can give permission for this. SOPs usually have operational and technical content and are written in short sentences making SOPs easier to understand so that they are easier to understand (Stup, 2001). SOPs can be long or short but must be comprehensive. This means that they must have enough meaning to explain the work in full. The information must be conveyed clearly and explicitly to eliminate doubts about what is needed. In addition, according to Akyar (2012), SOPs also use flowcharts to describe the processes that are being explained and must be written by individuals who have knowledge of the activities and internal structures of organizations or institutions. The SOP must be written in sufficient detail so that someone with limited experience with or knowledge of the procedure, but with a basic understanding, can successfully reproduce the procedure when it is not supervised. SOPs must be kept up to date to be useful and must be regularly reviewed and validated systems to ensure that policies and procedures are up to date and appropriate, or to determine whether one or more individuals are still required with training and experience that is appropriate to the process (Almeida S.L.).

The SOP must briefly explain the purpose of the work or process, including regulatory or standard information in accordance with the SOP process, and its scope, explaining the sequence of procedures to be followed, divided into several important parts such as possible obstacles, equipment needed, personnel qualifications, and safety considerations. SOPs must be written clearly so that they are easily understood by people who are knowledgeable with the general concept of procedures, and procedures must be written in a format that clearly describes the steps and their sequence. The use of diagrams and flow diagrams helps to break up long sections of text and to summarize a short set of steps for the reader. A copy of the current SOP must also be easily accessible for reference in the work area of people who actually carry out activities, both in print or electronic format, if the SOP has few goals (the United States Environmental Protection Agency, 2007).

Work Procedures and Procedure Requirements

According to Purnamasari (2015), SOP is a work procedure that is made in detail and detail for all employees to carry out their work as well as possible in accordance with the mission, vision, and goals of an institution, agency, or institution. Furthermore, according to Atmoko (2012),

standard procedure is a guideline or reference for carrying out work tasks in accordance with the functions and tools of performance evaluation of government agencies based on technical, administrative and work procedures indicators, work procedures and work systems in work units of organizations or institutions. According to Santoso (2014), the seven main points of a procedure are efficiency, consistency, minimization of errors, problem-solving, labor protection, work maps, and defense boundaries. Standard procedures usually have operational and technical content (Bodur, 2018). Work procedure is a way to do work from beginning to end which is a stage in the work procedures that must be passed by a job both about where it came from and where it wants to go to, when the work must be completed and what tools must be used so that the work can be completed (Moekijat, 2008). In an organization or institution, a standard procedure is a document or also called a manual is an interaction of processes within the organization which certainly involves a variety of procedures and involves all parties in a system or organization. From the explanation of the procedure above, the procedure is the stages of various activities carried out sequentially, involving several parties in a system. Only one manual document and its existence to describe and explain the procedures related to a working system. Hierarchically, it can be described that a manual is a collection of related procedures. Thus it can be said that the manual is the mother of the procedure (Smith & Fingar, 2003).

According to Siagian (2001), three main reasons for stating that work procedures are a system are: first, work procedures are the main rules that must be obeyed in the completion of cross-sectoral and multidimensional tasks that involve interaction, interdependence, and coordination between agencies, besides applying internally in the environment of one work unit. Secondly, the truth of the view that says that in running the wheels of an organization must be answered questions who is doing what activities, who is responsible to whom, who is interacting with who, what information network is in the organization, and what communication channels are available for who and for what purpose. Third, the clarity of work procedures is closely related to the transparency and openness of the government in the implementation of its functions and activities. According to Jinkyun (2009), one of the functions required from a procedure is to provide facts (for example, information) or ways (for example, detailed ways of doing or sequence of actions) that are useful for acting to implement and to achieve the goals set. Good procedures must provide important information such as information, detailed action

specifications and sequence of actions, etc. so that people who have already been involved or who have not been involved in a job can properly take the actions needed to achieve the goals.

Lazzaro (1986), said that in order to work more efficiently and effectively, it must consider several things that cover the scope of work procedures, namely as follows: (1) considerations before deciding everything that includes what will be done, whether things it is done, who will do it, how it is done, the availability of resources needed to complete the work; (2) temporary considerations of work in progress which include completing what is done, in the manner expected to be done, at the time that is scheduled to be done, using the resources available for that purpose; and (3) considerations after evaluating everything that has been done that includes what has been done, how well it has been done, whether it should continue to be done, how so that what has been done can be done better.

On completing tasks in an organization that does not have standard procedures, they rely on training and previous experience and show that there is no standard and good solution about how a job will be completed. Many traditional organizations have standards, but they are no longer suitable for use because they are out of date and not compatible with technological developments. Whereas the purpose of standard procedures is to ensure that everyone involved in a task can perform their performance in the same way (the United States Environmental Protection Agency, 2007). Standard procedures become a necessity that must be fulfilled by the organization in completing work and all steps, sequences, equipment, tasks of each individual and relationships between individuals must all be listed and explained, so that people who are newly involved in a task can be a savior and really help them and work will not stop even if someone who used to work is not in place or has been replaced either temporarily or permanently or can be used as a reference by other people even for the first time to do routine tasks including emergency tasks correctly (Bodur, 2018). When needed by others to complete a task, work procedures must include details that are individual so that the process or procedure can be followed and implemented. Work procedures need to be mastered by anyone who uses them and is able to reduce the complexity and solutions of all the complexities of doubts in completing a job. According to Marriott¹, et.al (2011), in the United Kingdom, procedure-based assessment (PBA), has been introduced to provide clinical assessment of structured and competency-based skills in the workplace for regulatory requirements and to maximize opportunities for training supervision. PBA has been adopted as the main method for assessing

procedural skills. A person who performs one type of procedure continuously well may not necessarily be able to understand and carry out his work with different types of procedures. Thus the work procedure is a description of the work process with the stages before the work begins (planning), when the work is carried out (implementation) and when the work is completed (closure/evaluation) which governs the

series of work procedures, relationships between personnel, the ways to be taken, the sequence of steps and the settlement that must be obeyed and carried out by someone involved in completing an activity or work effectively and efficiently in order to achieve the objectives of a job.

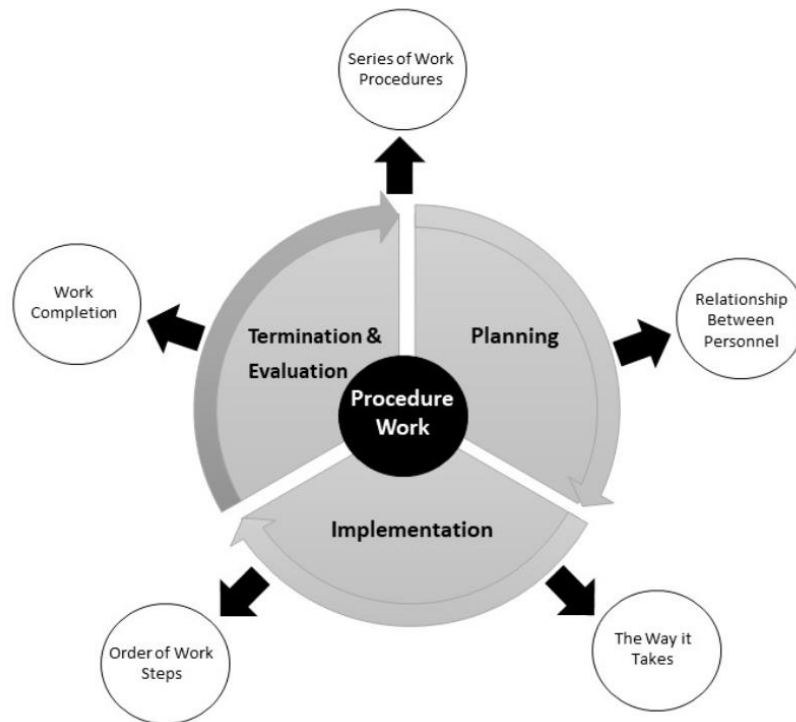


Figure 1. Work Procedure

Procedure on Physical Ability Test

A physical ability test is a test used to measure a candidate's physical capacity to do certain types of work. Physical ability tests help ensure that employees will be able to successfully and safely carry out physical tasks related to physically demanding work. In addition, research has shown that a person's physical abilities can predict success in various physical work tasks (SoCalGas). Physical ability tests are very necessary and must be carried out correctly because these tests are used to find out a person's fitness level. The use of work procedures in carrying out a test, especially a physical ability test that is massive and involves many testers, is absolutely necessary to produce valid and reliable test data. According to Miller (2002), some of the requirements of physical skills test otherwise

good are valid, reliable, objective, economical. According to Nitko, A.J. & Brookhart, S.M. (2011) reliability is the extent to which the test results remain consistent after being done repeatedly, according to assessment procedures. The validity of a test can be said to be valid if the test is able to measure what should be measured, or in other words show the accuracy of the measurement results (Mardapi, 2016). According to Barnett. et.al (2009), in their research, showed some problematic motor skills to be assessed and had a low-reliability score and highlighted some obstacles in determining reliability values in field-based research with direct observation rather than research using assistive and more controlled tools. Circumstances like this one of which are caused by a tester who does not carry out procedures that have been made or even no written procedures.

According to Winnick & Short (2014), the responsibility of the tester in a physical ability test is to measure the physical ability/fitness status of an individual by managing appropriately selected test items, providing recommendations for test administration, including the equipment needed, assessment, trials/exercises, test modifications, and safety guidelines and precautions. Other responsibilities include evaluating the level of physical fitness associated with comparing their results to recommended or optional test items with the fitness standards and zones that are referred to criteria that are appropriate for them. Using tests for the purpose of assessment tools can be very helpful when used correctly, but counterproductive if used incorrectly (U.S. Department of Labor Employment and Training Administration, 2000). One of the errors in the implementation of the test is due to not understanding what is measured and why you want to measure it. Not least on a test, there will

be cases where the test score or procedure will predict someone to be a good worker but in reality, it is not. The way to minimize such conditions is by creating a work procedure that guides in detail the implementation of the test. Lehn (1990), argues that failures or incompleteness of a job one of which is caused by the loss of certain types of information due to steps removed from the procedure so that it is unable or wrong to make a decision. Moreover, the testers did not fully understand and incorrectly interpreted the measurement methods in the procedure. Whereas Baumgartner & Ghaunt (2005) in their study the difficulty in the skills test was to interpret the results of the testers' observations into an assessment decision. Thus, someone who understands and masters procedures will be seen to be more masterful in completing work when compared to people who lack an understanding of procedures or even don't use procedures in completing work.

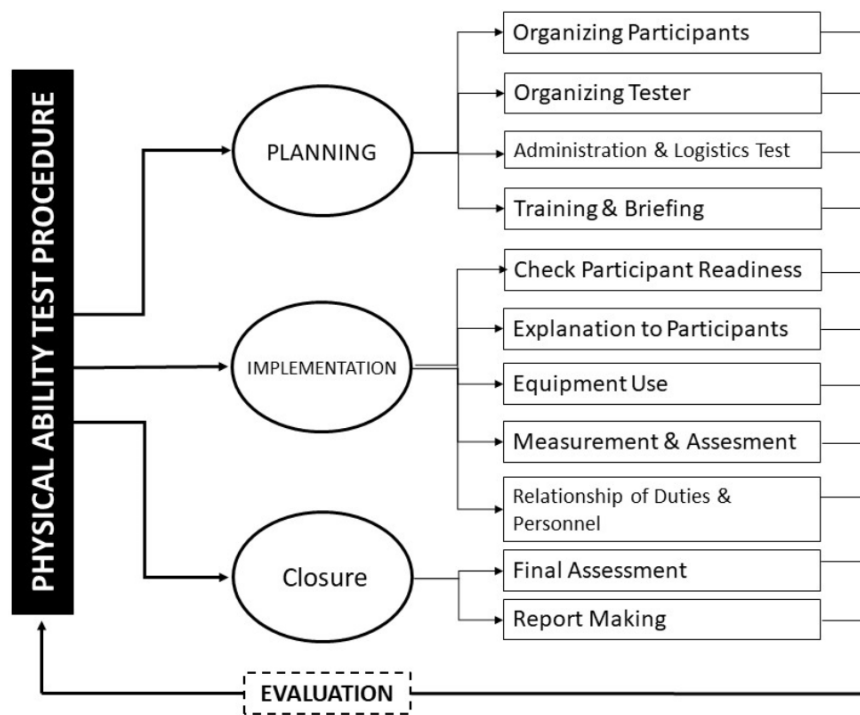


Figure 2. Physical Ability Test Procedure

In the physical ability test, to produce a valid and reliable test begins with the fulfillment of the procedure starting from the planning stage, the implementation stage and the termination stage (sometimes consisting of assessment and evaluation). Planning includes how to prepare administration and logistics, organizing testers and tests, training and briefings. At the implementation, the stage is the core stage, which starts with checking the readiness of the

teste, the explanation to the teste, measurement by the tester and the relationship or communication between tasks/personnel. While the termination phase is carried out by concluding the final assessment and making a report that can also be used as evaluation material.

CONCLUSION

In theory, work procedure is a stage in work procedures that must be passed a job starting from the stage before the work starts (planning), the implementation stage and the stage of work completion (termination and evaluation) which contains a series of work procedures, relationships between tasks and personnel, the method adopted and the sequence of steps in an objective, transparent, effective and efficient manner. An absolute procedure is needed to be used as a guide and lead to the completion of the

task. A good procedure must be suitable for the needs and the organization or institution that uses it. In physical ability tests, the availability of good procedures, which can be understood by all personnel involved (testers and testes), which regulate all matters relating to tests such as administration, personnel relations, equipment and so on will be very helpful for the smooth implementation of tests and obtaining results valid and reliable test.

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Corresponding author:

*Mr. Samsul Arifin, Graduate School,
Yogyakarta State University
Colombo Street No.1 Yogyakarta,
Yogyakarta 55281, Indonesia
E-mail: samsularifin.2018@student.uny.ac.id*