Performance Assessment Through Motion Literation to Assess The Motoric Skill of Junior High School Students Based on Laban Notation

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Abstract

Motor skills integrate physical functions and coordination between the brain as a center for information and control through visual activities (reading) and tactile (writing) movement symbols. Symbols and motion codes are found in labanotation, so the ability to read symbols and write symbol patterns is called motion literacy. It can be done through continuous assessment continuously in an effort to diagnose their abilities. The results of the study describe a change in the condition of students' motor skills after intervention through labanotation-based motion literacy work assessment, namely the change in conditions from the intervention condition (B) to the final baseline condition (A') decreases the students' adaptability. However, at the final baseline condition (A'), the motor ability score improved better than in the phase before baseline (A). The total average score obtained in this condition was 62.86%. Thus it can be concluded that the effect of performance appraisal through motion literacy provides benefits for improving brain function because structured and programmed motion exercises are useful in stimulating various learning centers in the brain. This also impacts on improving motor skills in students to undergo the learning process at a later stage.

Keywords: performance assessment, motion literacy, motor skills, Laban notation

INTRODUCTION

Dance can be defined as a physical movement consisting of ideas, movements, and rhythms to produce meaning. Movement in dance is related to motor skills, which can provide enhanced concentration, flexibility, and beauty. Gestures that can be used as media in a dance start from head-to-toe movements using fine movements (fine motor) and gross movements (gross motor skills) (Larasati, 2013).

These motor skills are found in dance learning, which requires the ability to mimic motion, develop motion, perceive motion, manipulate motion, and improvise motion. Harrow's theory states that the psychomotor realm consists of a manipulative motor and movement skills that require neuromuscular coordination (Cooper & Harrow, 1973).

This neuromuscular coordination that leads to motion that is done using one's cognitive is called motion percepti-

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on. Motion perception can be seen from several sides, including expressing emotions through postures or gestures which are manifested in the form of motion.

The way our bodies convey emotional information, such as adopting a collapsed posture when depressed or leaning forward to show interest, is also understudied. According to Calvo et al. (2014), we have studied less in the field of emotional body expression, which models how people communicate emotions through body postures and gestures and how people make inferences about the emotional state of others based on perceived posture and gestures. Less studied are how our body also conveys emotional information, such as adopting a collapsed posture when depressed or leaning forward to show interest. Unfortunately, Gratiolet's work remains largely unknown since his book has never been translated into English (Gratiolet, 2011)

Expressing motion in motor skills includes cognitive work, where Harrow describes it as Perceptual Abilities, namely by combining cognitive abilities with motion and Physical abilities, which are the abilities needed to develop high skill movements (Cooper & Harrow, 1973). Motor skills in perceptual abilities and physical abilities must integrate physical functions that coordinate between the brain as a center for information and control, where the information is received and processed and then transferred by motor nerves into movement (Triana, 2015).

One of the activities that can be given to help the motor and cognitive stimulation process is through the introduction of dance symbols, namely Laban notation. The symbols and codes in dance are quite complex, so dancers need to make written recordings of their movements, read symbols, and form symbol patterns. Furthermore, in his research, Bucek also explained that movement literacy is a tool to facilitate dance content skills. Movement literacy is carried out using various methods of coding, kinesthetic (moving), visual (reading), and tactile (writing) to

stimulate learning and understanding information (Giblin et al., 2014). The study of movement literation is used to determine the ability to think and move through dance notation in the form of symbols and coding (Bucek, 1998).

In this case, the ability to think and move, in this case, motor skills, requires continuous training by assessing the development of his abilities. Krasnow & Chatfield have conducted an assessment through a qualitative research study that explains the clarity of movement intention: Amplitude of range of motion, whole-body involvement (Krasnow & Chatfield, 2009). Also referred to as "spatial skills" or "spatial integrity," this theme relates to the concept of space, time, energy described by Bartinieff Fundamentals and Laban Movement Analysis (Angioi et al., 2009; Krasnow & Chatfield, 2009).

Changes in assessment strategy to measure skills in a complex global environment are needed (McTighe & Wiggins, 2012). The change in measuring competencies should be integrated with indispensable knowledge skills for the future and is required innovative learning and assessment for teaching collaborative work that will reflect in skills, ability, and knowledge (Babey, 2020; Bennett-Smailis, 2016).

Assessment of dance performances for the choreography course is an assessment of student dance work. One of the dominant aspects in assessing students' dance performances is related to dance composition theory. In learning dance, theoretical knowledge about dance is needed to support practical lectures, one of which is the choreography course, which is an implementation of dance theory lectures, especially the "dance composition" course (Triana, 2015).

Students are expected to solve problems through communication, information, media, and technology, including information literacy and media literacy (Bennett-Smailis, 2016). Afterward, the use of digital assessment can be classified into 1) basic literacy as numeracy literacy, scientific literacy, technology literacy, and

information, financial literacy, and culture literacy; 2) competence or ability to handle various complex problems; 3) ability to survive in a changing environment (Pendidikan & Jakarta, 2017).

Learning models that can measure student skills, for example, are performance, assessment, portfolios, and others, as expressed by Astuti et al. (2012: 40) in their research on the development of authentic scientific literacy-based assessment instruments on excretion system material, saying that "alternatives that can be conducted is using authentic assessment, the type of assessment developed is peer assessment, portfolio, performance, projects, attitudes, and tests, each of which is developed based on scientific literacy." Performance appraisal is an alternative form of assessment that requires students to actively show their performance because what is assessed is the final result and the process or skill to see students' knowledge and abilities (Meutia, 2013). Performance appraisal such as the performance of our assignment presentations can assess the three existing aspects, namely cognitive, affective, and psychomotor aspects.

In the context of learning, performance assessment is an assessment technique in which data collection processes for making decisions about individuals are carried out by means of systematic observation. There are five operational performance assessment definitions, such as (1) performance assessment is a process, not a single test or measurement device; (2) the focus of this process is data collection, using various instruments and strategies; (3) data were collected by means of systematic observation. The emphasis is on direct observation techniques rather than paper-and-pencil tests, especially not multiple-choice, although these tests can also be used in assessments; (4) integrated data is used for the purpose of making certain decisions that will guide the form and substance of the assessment; and (5) the subject of decision making is an individual, not a program or product that reflects a group activity (Smp et al., 2013)

Various methods are used to develop motor skills so that children can develop their physical motor skills. One way that can make children active and make children happy is by using dance activities through learning movement literacy.

Junior high school students should be able to perform body movements in a coordinated manner to train flexibility, balance, and agility. From this problem, an assessment and improvement are needed that improves students' motor skills. Junior high school students need interesting and fun activities so that children do not get bored with the activities to be carried out. One of the activities that can be given to help the child's gross motor stimulation process is through the introduction of dance symbols, namely Laban notation. The symbols and codes in dancing are quite complex, so dancers need to make written recordings of their movements, read symbols, and form symbol patterns. Furthermore, in his research, Bucek (1998) also explained that the literacy movement is a tool to facilitate dance content skills. Literacy movements are carried out using various coding, kinesthetic (moving), visual (reading), and tactile (writing) methods to stimulate learning and understanding information (Sudlow, 2019).

A variety of exercise patterns of motion can increase the potential for physical, emotional, social, and cognitive abilities. Movement pattern training is very influential on a person's potential for movement in physical skills. Therefore it is necessary to know the body through experiences of movement. Through awareness of body movement patterns, a person will be able to achieve the skills of body movement independently

METHOD

This type of research is a descriptive quantitative experimental research with a research design carried out on a single case, namely comparing the same subject in different conditions.

The design used in this study is ABA.

In this design, there are three conditions observed, namely the initial condition or baseline one (A), which is motor skills before the intervention is carried out, then when the intervention is carried out (B), in the form of learning achievement assessment in Laban notation, and baseline two (A ') is the condition after the intervention.

In this study, the influencing variable or the independent variable was in the form of an assessment of the learning performance of Laban notation, while the dependent variable was motor skills. Motor skills were measured at the condition before the intervention (baseline), at the time of the intervention, and after the intervention (baseline).

The subjects were students from ten junior high schools in Jakarta, totaling 85 students. Subjects are in the middle education age range and have a high interest in dancing activities. In this study, the instrument used was in the form of a performance instrument given to a person with the intention of getting a response that could be measured and used as the basis for determining quantitative data. In this study, the set of stimuli referred to is verbal instruction, and the measured response is in the form of actions that describe motor skills through movement literacy.

Data analysis in research using a single subject research design aims to determine the effect or effect of the intervention on the target behavior. Each data obtained from the baseline (A) and intervention (B) stages was made a descriptive analysis.

RESULT AND DISCUSSION

There are three stages of the test given: the test at the initial baseline stage, the intervention stage test, and the final baseline. The test at the baseline stage aims to determine the initial ability of the subject before being given intervention, the test at the intervention stage aims to determine the effect of the intervention on learning outcomes, while the test at the final baseline stage aims to determine the effect of the

intervention on motor skills when the intervention has not been re-applied (whether it is permanent or not. change in target behavior). Before entering the intervention phase, the application of Laban notation learning was carried out. Daily gross motor skills tests are done after doing three basic series of motion literacy. Motion literacy activities were stopped at the final baseline condition, but a gross motor test was still carried out.

Table 1 describes the summary of the results of data analysis in the following conditions: (1) The length of the conditions carried out in the baseline phase (A) is two sessions, in the intervention phase (B) is four sessions, while the baseline (A') is two sessions; (2) Based on the estimation line of the directional trend, it is known that the baseline condition (A) estimates the tendency to increase because the median score obtained in the right is higher than the median score in the left hemisphere in each condition, this means that the research subject has increased in motor skills; (3) the results of the trend of stability at baseline (A) are 0%, which means the data is not stable. In the intervention condition (B), it was 62.5%, which means it was unstable. At baseline conditions (A '), the trend of stability reached 100%, which means stable; (4) Based on the trace line data, it is known that the baseline condition (A), the intervention condition (B), and the baseline condition (A ') are increasing because the median score obtained in the right is higher than in the left; (5) Data on baseline conditions. (A), the score tends to increase but is not stable.

At the baseline condition (A '), the data scores tended to increase but were stable in the range; (6) In the baseline condition (A) shows a plus sign (+) which means the data has increased, in the intervention condition (B) it has increased so that the data shows a plus sign (+) while in the baseline condition (A ') it has increased so that the data shows a plus sign (+).

Table 2 is a summary of the results of the analysis between conditions with the following explanation: (1) The number

Table 1. Summary of analysis results under one condition

Condition	A	B	A′
Duration	2	4	2
Estimation of Directional Trend	(+)	(+)	(+)
Trend of Stability	Unstable (0%)	Unstable (0%)	Stabile (100%)
Stability Level and Range	39-57	61-79	61-64
Level Change	57,14%- 39,29% (-17,85%)	78,57%-60,71% (-17,86%)	60,71% -64,29%- (+3,58%)

Table 2. Summary of analysis results between conditions

Condition	A	B
Number of changes in Variable	1	1
Changes in Direction and Effects	(+)	(+)
Stability change	Variable to variable	Variable to Stable
Level Change	+3,57%	-17,85%
Overlap Percentage	0%	-

of variables to be changed is one, namely the baseline condition to the intervention condition; (2) The acquisition trend of the direction between baseline conditions (A) to intervention (B) and intervention (B) to baseline (A′) is increasing. That means that the target behavior increases after the intervention is given; (3) The change in the stability trend between baseline (A) and intervention is variable to variable.

While the trend of stability between an intervention (B) to baseline (A′) is variable to stable, (4) The motor skills from the baseline to the intervention conditions increased by 3.57%. Meanwhile, the motor skills from the intervention conditions to the baseline (A′) decreased by 17.86%; (5) The percentage of overlap or overlapping data from the intervention (B) to the baseline (A) is 0%.

Based on the results of the data overlap percentage of 0%, it shows that the provision of intervention in the form of performance assessment in learning motion literacy has a significant effect on the target behavior, namely motor skills with reading specifications and describing junior high school students.

According to Wendt (2009), the percentage of non-overlapping data <50% shows that the intervention has no significant effect. The rate of non-overlapping data is 50% -70%, indicating that the effectiveness of the intervention still needs to be questioned. The percentage of non-overlapping data 70% -90% shows that the intervention is quite adequate, and the rate of nonoverlap data >90% indicates that the intervention is very effective. Based on the results of the study, it was found that the overlapping data was 0%; in other words, the percentage of non-overlapping data was 100%. This proves that the intervention is very effective in increasing target behavior.

Discussion

In the baseline phase, the motor skills test was carried out on the subjects and got relatively low results with an overall average of 45%. In terms of the ability to move, the subjects experienced very slow motor maturity, poor coordination, difficulty in focusing, deficient physical health, and often absent due to illness. Kaplan and Sadock (2010) agree that mentally disabled children have deficiencies in coordinating movement and sensory, low tolerance, focus, difficulty understanding language, and doing work. The results showed that the level of physical fitness for mentally disabled children was in the deficient category.

In the intervention phase, where

children like the performance appraisal session through movement literacy, the students' motor skills increase. This answers Kurniati's (2013) opinion that one of the learning objectives for students is to socialize, adapt, and have fun activities. The total average score obtained in this condition is 73%. According to Sousa's (2012, p. 258) statement, symbols can affect the body by changing the response, speed of seeing, reading, and the ability to describe. These responses result from the activation of the neural networks involved in motivation and pleasure. According to Lwin et al. (2008), response to a motion is the first aspect that must be developed from a neurological perspective. Of all the intelligence in a person, movement literacy has a big influence on humans and can develop other intelligence. In this case, movement literacy also contributes to the subject being able to remember motion, concentration, and happy mood. Motion literacy also improves motor planning or motion planning abilities and optimizes individual cognitive performance.

Changes in conditions from the intervention condition (B) to the final baseline condition (A') reduce the adaptability of mentally disabled students. However, at the final baseline condition (A'), the motor ability score increased better than in the phase before the initial baseline (A). The total average score obtained in this condition is 62.86%.

Learning to dance is a very useful alternative for physical activities. When individuals perform left, and right movement activities, blood flow in all parts of the brain increases; this activity will unite the motor and cognitive areas in the brain, namely the cerebellum, basal ganglia, and corpus callosum. And, it can stimulate the production of neurotrophins which can increase the number of synaptic connections. Eye movements that follow hand movements will train the relationship between the center of vision and the center of the activity.

Balance exercises will stimulate several parts of the brain that regulate balance, such as the cerebellum, the center of the movement in the forehead area (frontal lobe) in the cerebrum. This is useful for mental concentration, planning, decision-making, the center of sense of attitude, and a sense of movement in the crown area (parental lobe).

The Savion-Lemieux, Tal Penhune, Virginia B (2005) study shows that the distribution of exercise over several days, not the number of exercises, is the most crucial factor affecting motor skills learning. Thus, in line with other studies (Hauptmann & Karni, 2002; Korman et al., 2003; Ofen-Noy et al., 2003)it is not clear how much practice is needed to trigger long-lasting performance gains on a given task. Here, using a letter enumeration task, we show that the transition of experience dependent performance gains to a relatively stable form, as well as the triggering of delayed, long-lasting, between session gains (both effects are considered manifestations of consolidation processes, we suggest that time travel is essential in order to get the maximum benefit from practice, since time delays allow for consolidation of learning, perhaps reflecting changes in cortical motor representations of skills. Under variable delay conditions, the delay differently affects specific performance parameters on recall.

We did not find any differences in performance between the varied exercise groups but found a global increase in training days suggests that the total amount of exercise was not the main factor influencing learning. In contrast, we suggest that the distribution of practices over several days may be a more important variable influencing learning.

Other studies have found similar retention for periods from several weeks to 2 or 3 years (Hikosaka et al., 2002; Karni et al., 1998; Nezafat et al., 2001). In addition, Kleim et al. (2004) have shown that the reorganization of motor maps and the formation of synapses occurs during the final phase of learning (beyond the first few practice sessions). From these two sets of findings, it might be hypothesized that

once a skill is well learned and performance reaches an asymptote, lasting functional and neural changes occur, resulting in the stable long-term memory of motor skills.

The main contribution of this article is to map motor skills through performance appraisals using motion literacy based on Laban notation, which provides a high-level description of movement. This mapping does not depend on certain low-level motion representations. Although we offer a comprehensive set of motion parameters approved by movement experts, our results are not tied to these representations. An extended or very different model of motion should yield the same motor skills. Our aim is to produce a clear embodiment of the quality of motion literacy based on language notation and then demonstrate its relationship to motor skills as long as motion literacy shows the desired quality of motor skills, different animation techniques, parameters, or experts not a problem. The end product is a representation of the quality of Effort and Form, which is an apt concept.

Movement literacy can reflect the characteristics of a person's motor skills. Future research is an area of interest defining the relationship between motor skills and the quality of practice and learning and placing these relationships above personality-edited movements. Similar techniques can be applied to study the mapping between motor skills and motion.

CONCLUSIONS

Based on the analysis and discussion results, it can be concluded that the motor skills before the implementation of performance assessment through motion literacy are relatively lower than when the performance assessment through motion literacy was applied. Motor skills after the application of performance assessment through motion literacy were relatively lower than during the application of performance assessment through motion literacy, but the results were higher and stable compared to the conditions before the intervention. The

effect of performance assessment through motion literacy provides a fairly good benefit to the improvement of brain function because structured and programmed motion exercises are useful in stimulating various learning centers in the brain. Increasing motor skills in students has a good impact on learning effectiveness at school because children are better prepared to undergo the learning process at a later stage.

In addition, exercise in the balance function has a good effect on emotional control, where children also experience disturbances. Physical activity can change the function of the neurotransmitter system in the brain. Physical activity activates the monoamine system and has an antidepressant effect.

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