

# Instrument Development To Improve Learning Process Assessment of Ear Nose Throat Specialist Education Program Student

Dwi Antono  
Universitas Negeri Semarang  
[drdwiantono@yahoo.com](mailto:drdwiantono@yahoo.com)

Joko Widodo  
Universitas Negeri Semarang

Tri Joko Raharjo  
Universitas Negeri Semarang

Wahyu Hardyanto  
Universitas Negeri Semarang

**Abstract**---The need for ear, nose, throat – head and neck surgery specialists is still under ideal conditions. Until now, the number of these specialist doctors is around 1200, which so the ratio of doctors to a population of 1: 2000 is not ideal. The need for doctors is not comparable with the study period of medical / specialist students. This is a concern. The learning process that was followed turned out to be unable to measure the resulting learner performance. With this background, research needs to be carried out to reveal instruments capable of assessing the learning process of students. This research aims to describe the appropriate instrument to measure the student learning process. The study used a case study research design, with research subjects being doctor specialist education program students. The results of the phase I research showed that 1) 64.4% of the students understood the learning competencies and indicators; 2) 49.3% of students thought the learning was not implemented as planned; 3) 87.4% of students think that the assessment process is only done by means of a check list. The results of the second phase of research showed that 1) 74.7% of students understood the learning competencies and indicators; 2) 66.3% of students thought the learning was not implemented as planned; 3) 54.8% of students think that the process assessment is only done by means of a check list. The average learning outcome for group II was higher than group I. Recommendations for related parties to be able to understand and be able to supervise and direct the development of instruments to improve the quality of learning.

**Keywords:** instruments, assessment, learning process, ear, nose, throat, neck, head surgery

## I. INTRODUCTION

One indicator of the success of health development is through equal distribution of health services for every Indonesian citizen. The total population of Indonesia is 252.04 million people (Setiawan, Ramadani, and Budiatmodjo. 2014), with the number of medical personnel still very low so that health services are not optimal. Koran Republika (2015) in the article "The Distribution of Doctors is a Problem in Indonesia", stated that the ideal ratio of doctors and the population in a province is 1: (2500-5000). This figure has not been achieved and is evenly distributed throughout Indonesia. The need for a

specialist in Ear, Nose, Throat, Head and Neck Surgery (THT-KL) under ideal conditions. The number of Head and Neck specialists is still around 1,200, so the ratio of doctors to a population of 1: 2000 is not ideal. The distribution of specialist doctors, especially THT-KL specialists, is still concentrated on the islands of Java and Bali.

In an effort to fulfill and improve the quality of THT-KL health services, the need for ENT-KL specialists is increasing, therefore an THT-KL specialist education program (PPDS) is organized. The medical faculty of Diponegoro University Semarang is one of the organizers of the THT-KL Specialist Doctor Education Program 1 (PPDS 1) with a study period of 8 (eight) semesters. Despite the fact, the average study period is around 9-10 semesters. This situation has the impact of slowing the acceleration of the need for THT-KL specialists. The current ratio of lecturers to students is 1: 6 with an ideal ratio of 1: (3-4).

In an effort to increase the number of graduates, it is necessary to have a model for developing evaluation measuring instruments that are more effective and efficient, but still maintain the quality according to the expected competencies. The model is able to measure the evaluation of PPDS I in an integrated / comprehensive manner. Research by Al Haqwi et al (2010) explains that the factors that influence learning success are the provision of real clinical learning experiences, good organization at clinical learning sessions, selected clinical cases, good supervision and student learning abilities (Al Haqwi et al, 2010). Based on this research, it can be concluded that the provision of student experiences will be seen from the measurement results of the educational processes and products they experience.

The results of preliminary observations showed that 77% of students did not understand the assessment process; 69% of students stated that the lecturer made a process assessment using a check list; 20% stated that there was a questionnaire assessment to measure understanding. The check list is one of the non-test assessment methods using a series of written lists to analyze a system or activity tester (Daryanto, 2005). This method is great for being a reminder of

past data, easy to use for all stages of the process. Even so, this assessment cannot see how the learning product increases and decreases, how learning outcomes are, etc. Johnson (2009) describes that performance appraisal will bring learning towards achieving goals. Based on the foregoing, the problem is formulated how to develop instruments to improve the assessment of the learning process of PPDS I THT KL students.

Regional policy inforegio (2012) divides the objectives of evaluation activities into 4 (four) categories, namely: (1) Planning / efficiency; ensuring that there is a justification for a policy / program and that resources are efficiently deployed, (2) Accountability; demonstrating how far a program has achieved its objectives, how well it has used its resources and what has been its impact, (3) Implementation; improving the performance of programs and the effectiveness of how they are delivered and managed, (4) Institutional strengthening; improving and developing capacity among program participants and their networks and institutions. Assessment aims to measure the impact of a program by comparing the results with predetermined goals. The results of the assessment can be used as material to improve working conditions, welfare and other work decisions. the results of the assessment describe the work results and compare the expectations with the reality entrusted to people to achieve goals.

Three functions of assessment, namely: (1) measuring progress, (2) supporting planning, and (3) improving or re-enhancing. Sudijono (2006) explains that apart from having a general function, assessment also has a special function. The specific functions in the field of education can be viewed from three aspects, namely: (1) psychological aspects, (2) didactic aspects, and (3) administrative aspects. According to Daryanto (2005), there are several principles that need to be considered, namely integration, student skills, coherence, pedagogy, and accountability. Integrity can be seen from the suitability of objectives, materials, and learning methods. Therefore, the assessment plan must have been determined at the time of compiling a lesson so that it can be adjusted harmoniously with the instructional objectives and the material to be presented.

Process assessment includes teacher and student participation, interaction, classroom climate, classroom culture, quality of learning, classroom management, and time management. Muslich (2011) explains that process assessment can be done through observation and assessment of interactions during the learning process. Each learning process according to Budiningsih (2005), there are 3 (three) stages that students must take, namely the stage of receiving the material (information phase), the stage of changing the material (the transformation phase), and the material assessment stage (the evaluation phase).

According to Wittig (1981), every learning process always takes place in the stages of actuation (obtaining / receiving information), storage (information storage), and retrieval (getting back information).

Assessment has five functions, namely: (1) providing a basis for assessing achievements, (2) providing information to determine the position of each student in the group, (3) providing material for determining the status of students, (4) providing guidelines to find a way out for students who need it, and (5) provide guidance on the extent to which the objectives of the teaching program have been achieved. Administrative assessment of education has at least three types of functions, namely: (1) providing reports on the progress and development of students who participate in activities within a certain time, (2) materials for decision making, and (3) providing an overview of the results that have been achieved in learning process.

Parke et al (2003) stated that the assessment was carried out to obtain information about the content of knowledge (knowledge), strategic knowledge (strategic knowledge) and communication (communication). Knowledge content is measured by paying attention to (1) correct understanding, (2) terminology and notation, and (3) scientific procedures. Wiggins (1984) states that assessment is a means of chronologically monitoring learners. Popham (1995) states that assessment should be part of learning not an inseparable thing.

In carrying out assessment activities, an instrument is needed as a measuring tool to obtain data. By using the instrument, the level of learning achievement will be known. Assessment can be done through 2 (two) techniques, namely tests and non-tests. Both techniques are used to find data related to the purpose of the assessment being carried out. The test is an assessment technique in the form of questions to get answers from students in oral, written, or deed forms. Non-test assessment techniques are used to measure learning processes and products. This technique can be used to measure processes and products produced during learning such as attitudes, motivation, performance appraisals, and others. Arikunto (2013) explains that the variety of non-test techniques includes multilevel scales, questionnaires, match lists, interviews, observations, and life history. The non-test technique is a method used to obtain information related to cognitive behavior. Non-tests usually contain questions or statements that do not have absolute correct or wrong answers.

Performance appraisal instruments must be standardized that measure knowledge and skills with complex communication. (Quansah & Amoako (2018), Palm (2008)). The assessment instrument used must follow the principles of assessment such as comprehensive, cooperative, objective, practical, and others (Arifin 2012). The learning performance instrument must focus on chronological assessment

goals that monitor the effectiveness of learning and the learning process of students in achieving learning goals. The instrument not only reveals the concept but also the process of its development. (Wiggins (1984), Marzano (1994)).

## II. METHODS

The approach of this research is qualitative-quantitative case study. The Case Study research design reveals solutions to cases encountered in the performance assessment of PPDS I THT-KL in teaching hospitals and network hospitals.

The data source is the PPDS I THT -KL program. The primary data of this study were PPDS I THT-KL students who were practicing in teaching hospitals and network hospitals. Secondary data are supporting sources in research such as THT-KL specialists, PPDS I ENT-KL study programs, and documents related to student activities, and related literature sources. Tertiary data is taken from dictionaries and encyclopedias that explain the understanding of the meaning in various terms in PPDS I THT-KL.

This research data collection technique by observation, interviews, and documentation in various settings, various sources, and various ways. The data validity was done by using source triangulation technique. The data analysis technique is carried out through the stages of data collection, data reduction, hypothesis determination, data presentation in the form of diagrams or percentages to see the increase that has occurred and draw conclusions.

## III. RESULTS AND DISCUSSION

The final objective of this study is to describe the improvement of the assessment process through the development of appropriate and appropriate PPDS I THT-KL student instruments. In connection with that, it is necessary to explore various things related to the learning profile of PPDS I THT-KL students in teaching hospitals and network hospitals. The description of the initial profile of PPDS I THT-KL learning can be seen in Table 1

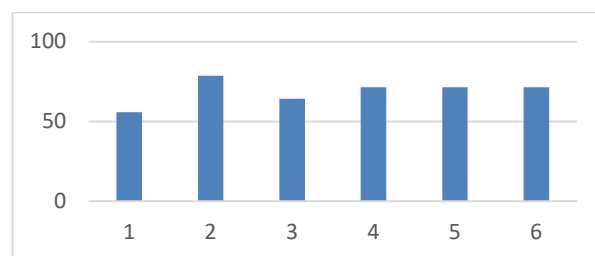
**Table 1.** Initial Profile of Student Learning

No	Indicator	Percentage
1	Understanding of basic competencies and indicators	55,7
2	Implementation of learning	78,6
3	Suitability between learning resources / media	64,3
4	The level of complexity in using sources and media	71,4
5	Learning Interaction	71,5

6	Learning assessment	71,5
<b>Means</b>		<b>68,8</b>

The initial profile of PPDS I THT-KL student learning is planned through the study program curriculum (Annex 3.1), academic regulations (Annex 3.2), and stage procedures (Annex 3.1). Even so, the socialization and understanding of this curriculum is still not optimal. It can be seen that the percentage of perceptions of understanding competence and learning indicators is the lowest percentage of 55.7% (poor criteria). Perception of learning implementation occupied the highest percentage of 78.6% (good criteria). In general, the initial profile of learning according to students, 68.8%, is in good enough criteria.

Further, it can be seen in Figure 1 which is an explanation of Table 1. Figure 1 shows the highest and lowest contributors to the indicators presented above.



**Figure 1.** Description of the Early Learning Profile of Students

Figure 1 shows that low understanding of competencies and learning indicators will lead to low final assessments. This is approved by the student at the upper stage.

*"I used to be like that, when I first started learning, I did not understand the content of the indicators, let alone the competencies to be achieved. The result is that my learning outcomes are not optimal because my process is not optimal "(W.R1 / Dec 2019).*

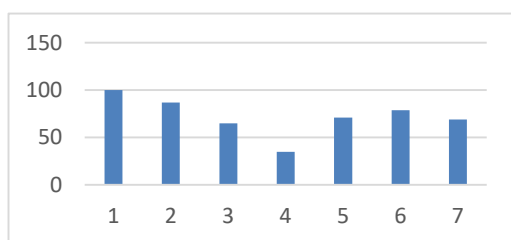
*"It was not the learning that was wrong but the understanding of the competencies to be achieved was not yet reflected at that time. Alhamdulillah, I got through even with hard work. " (W.R2 / Dec 2019).*

Some opinions show that understanding basic competencies and indicators is a must for students. The problems are caused by the characteristics and understanding of students in stage I. Table 2 shows that the characteristics of students are quite good (72.29%).

**Table 2.** Student Characteristics

No	Indicator	Percentage
1	Interest during learning at PPDS I THT-KL	100
2	Attention during learning	87
3	How to learn while attending PPDS I THT KL	65
4	Learning difficulties during the process	35
5	Student learning needs	71
6	Student learning readiness	79
7	Communication and interaction skills	69
<b>Means</b>		<b>72,2857143</b>

The lowest characteristic is found in understanding learning difficulties. The lowest percentage of support appears in indicators of learning methods and communication and interaction skills. Meanwhile, the highest percentage contributor is found in the interest in learning indicator. Furthermore, student characteristics are depicted in Figure 2.



**Figure 2.** Understanding Student Characteristics

The interesting thing in this description is that there is a perception percentage of 100% although there is also a percentage of 35%. High interest in learning but have difficulty learning about the process. Support for learning difficulties appears in the lack of learning methods and good communication and interaction of students.

The description of the learning assessment during and at the end of the process is illustrated in Table 3 and Figure 3.

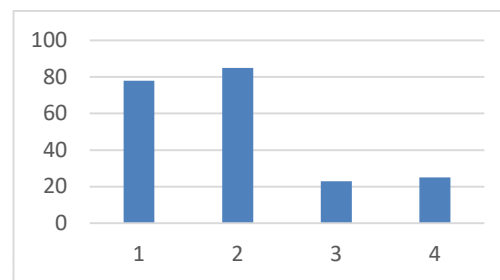
**Table 3.** Perceptions of Learning Assessment

No	Indicator	Percentage
1	Terdapat penilaian proses dalam pembelajaran	78
2	Ketersediaan kisi dan instrumen pada kegiatan penilaian	85
3	Instrumen bervariasi	23

4	Pemahaman akan refleksi sebagai feedback dan tindak lanjut	25
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**Means 52,75**

Perception of understanding of learning assessment has a poor average (52.75%). Display further description can be seen in Figure 3.



**Figure 3.** Display Further Description

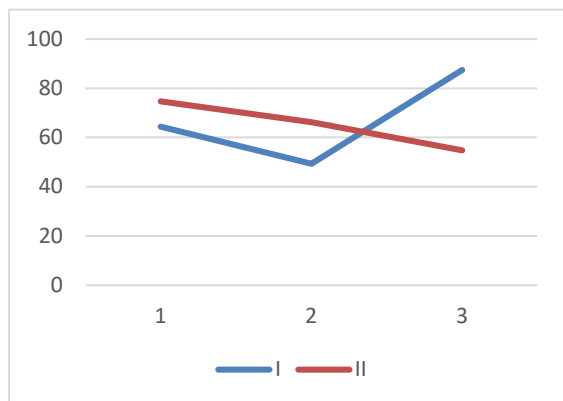
In accordance with the design of learning activities in the lesson plan that has been presented (D.3.1), it shows that the lecturer has implemented the design of an assessment instrument based on competence and indicators (this is indicated by the largest percentage contribution). The problem that arises is that the standardized instruments often do not see the characteristics and potential of students. The perception of a lack of assessment of learning gives the lowest percentage of various instrument indicators. This shows that the measurement of process performance often uses the same and similar modes.

Based on Table 1, Table 2, and Table 3, it shows the importance of analyzing student perceptions at the middle and end stages. The analysis was divided into two groups I (middle stage) and II (end of stage). Table 4 shows the results of the student's perception analysis.

**Table 4.** Analysis of Student Perceptions in Stase

No	Indicator	Percentage	
		I	II
1	Understanding of competencies and indicators	64,4	74,7
2	Implementation of learning as planned	49,3	66,3
3	Process assessment only uses a check list	87,4	54,8
<b>Means</b>		<b>67,0333</b>	<b>65,2667</b>

The average indicator contributes to the change from good enough to good. The analysis of each indicator is shown in Figure 4. The steepness of the graph line changes does not indicate no increase.



**Figure 4.** Analysis of Student Perceptions in Stage

Figure 4 shows that the results of the achievements of each indicator (especially indicators I and 2) always show an increase, although the initial percentages are not the same. Whereas for the 3rd indicator there is a reversal relationship. This shows that there is a decrease in the percentage.

Conclusion Table 4 and Figure 4 show that students at the end of the stage will have an increased understanding of competencies and indicators as well as learning implementation as planned. Students at the end of the stage will have a perception of a wide variety of assessments. It is different from the understanding of middle-stage students. Because they already understand more instruments, the percentage of perceptions of a single instrument is small.

This change shows that the development of a variety of instruments received by students at the end of the stage will improve the performance assessment of the learning process. this is in accordance with the curriculum and academic regulations (D.3.2). The academic regulations govern the scope, techniques, requirements and criteria for evaluating the results and evaluating the progress of student studies. Learning performance appraisal schemes carried out by lecturers or assistants are usually made for cases of learning stages outside of campus. The schemes made by each lecturer are different.

Process performance appraisal which is intended to realize student competency achievement during the process and provide learning experiences that are useful for improving student competence. Carillo (1999) describes that learning is a continuous and continuous improvement process. The problem encountered is that learning assessment does not measure the success of processes and products accurately and permanently. Reflection and improvement is very important to do. Zohar (2002) shows the need to measure the achievement process in the cognitive, affective and psychomotor domains.

Experience developed in context includes experience, personality, sensitivity, awareness, responsibility. Measurable assessments include self-understanding, self-assessment, and assessment of others. And this requires a variety of assessments and appropriate instruments.

The learning experience as referred to by Zohar (2002) will improve the quality of learning when it is measured and assessed appropriately. The development of performance appraisal instruments is needed in an effort to achieve quality learning outcomes. Instrument development must pay attention to 1) the characteristics and potential of students; 2) implementation of learning; 3) the experiences to be revealed. In developing the instrument, other researches are needed to further examine this.

#### IV. CONCLUSIONS

Based on the results of the research and discussion, it can be concluded that 1) the performance assessment of the THT-KL student learning process is carried out by looking at the initial profile of the student, student characteristics, and student understanding of the learning process performance assessment. The results of the analysis show that the initial profile and characteristics are quite good, as well as the understanding of the learning assessment is not good; 2) there is an increase in understanding for students at the middle and end of the stage. Increased understanding > 20%. Research recommendations are aimed at related parties to be able to understand and be able to supervise and direct the development of instruments to improve the quality of learning.

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