



TRAINING AND GUIDANCE USING SPSS FOR TEACHERS' RESEARCH DATA PROCESSING APPLICATIONS AT KECAMATAN TANGGETADA, KOLAKA SOUTHEAST SULAWESI

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Abstract

This devotion is aimed to improve the ability of teachers to process research data using SPSS. Things that the background is the lack of the use and knowledge of teachers in the use of SPSS and research works of teachers is lacking, one possible cause is the inability of teachers in data processing, especially using SPSS. This devotion includes four phases, namely, preparation, determination of the participants, the training and guidance of the use of SPSS, and direct practice of use of each of the steps in the data analysis in SPSS. The methods used include lectures and question and answer, targeted discussion groups, guidance and simulation data analysis, and direct practice with SPSS data analysis, and administration tasks. Outputs produced is yielding clues analysis work program SPSS for teachers and guidance techniques and operation of SPSS in data processing as well as the need to retrieve accurate results and capable operation of SPSS in data processing based on the instructions of work to be able to determine the valid data instrument and obtain accurate results.

Keywords: *application, SPSS, research data*

A. Introduction

In accordance with the mandate contained in the Act of Teachers and Lecturers (2005) in the academic field is that teacher education qualifications required diploma level or S1. It is intended that they have professional skills in order to improve the quality of education in Indonesia. The teachers' minimum requirements are diploma level, that is expected to be not only capable of teaching and learning in the classroom, but they are expected to do research for the improvement of the learning process that they do on an ongoing basis.

Accordingly, in accordance with the limited observations were carried out in schools teachers in mind that one of their drawbacks is the lack of work in the field of scientific work and research which caused one of them is unskilled teachers in data processing, especially using the help of applications that can facilitate them. This shows that one of the weak points owned by the teachers to be addressed. Weaknesses possessed by the teachers, based on the limited

observations, apparently also experienced by teachers, especially teachers of junior high school at Kecamatan Tanggetada, which is in Kolaka.

Kecamatan Tanggetada is one District in Kolaka that most residential and educational institutions located near the beach, a result of the location is quite far from the city center districts that have not been reached by the activity of devotion, especially in the fields of research, from universities in Kolaka, namely University Kolaka November nineteen. Therefore, our teams of Service Department of Mathematics Education, Guidance and Counseling, University of Sembilanbelas November Kolaka intend to do community service for teachers at Kecamatan junior Tanggetada in the form of training and guidance of the use of SPSS for data processing research conducted by teachers. The goal is to help teachers who have one of the difficulties in conducting research, especially in the processing of data that impede their research to finish which is one of the professional duties of teachers as educators, as has been mentioned earlier. It could be said that with the holding of the training and guidance of the use of SPSS for research data processing is expected to strongly support the junior high school teachers at Kecamatan Tanggetada in developing academic competencies in a sustainable manner.

In accordance with the previous explanation, that since the enactment of the Law on Teachers and Lecturers, every teacher is no exception teachers in junior high school Kecamatan Tanggetada Kabupaten Kolaka, required to become professional teachers. A professional teacher said was marked by evidence that teachers have passed the certification. The problem is on the one hand the teachers need to pass the certification with one of the requirements is the teachers need to show proof that they are able to conduct research and produce work in addition to learning a routine at school, on the other hand are generally teachers are still difficulties and need guidance in conducting independent research in particular processing the data they have acquired, such as in the form of experimental research. This is a serious problem often faced by teachers of junior high schools at Kecamatan Tanggetada.

Meanwhile, most of the activities of the teacher merely discuss matters of administrative such as discussion of making lesson plans and discussion the creation of standard tests or general tests, however, less in terms of the discussion of the research problem. There are several factors as the cause. One of them is the lack of teachers or experts who can build research capacity, particularly in research experiments. So teachers are less able to do research particularly for data processing for experimental research.

The expected outcomes of Community Service activities are as follows:

1. Generating work instructions for SPSS analysis program for teachers
2. Technical guidance and operation of SPSS in data processing so that they can determine the data valid instrument as well as the need to retrieve accurate results.

Able to operate SPSS in data processing based on the instructions of work to be able to determine the instrument data is valid and accurate results.

B. Literature Review

Technological developments now require researchers to be active in updating the latest information. It is intended that the rate of development of future research will be more qualified and more complex. One of the current technological developments is SPSS (Statistical Program for Social Science) as a computer-based analysis tools. According to Razak (2010: 1) SPSS statistical software is one of the first made in 1968 by three students of Stanford University, the Norman H. Nie, C. Hadlai Hull and Dale H. Bent.

The use of SPSS in various fields of research are numerous, so the latest versions of several publications continue to do until now there IBM SPSS V.21. According Sebayang (2005: 1) SPSS is a package program that is useful to analyze statistical data and SPSS is used for almost all data files and also create reports either in the form of tabulations, graphs, and plots for various distributions and descriptive statistics.

Data is information that can be used to resolve and solve a problem. Here are some expert opinions understanding of the data in Bobsusanto (015:1):

1. Slamet Riyadi; explains that the data is aggregated information obtained from observations where data can include numbers or symbols.
2. Zulkifli A.M; expresses the data is information, evidence or facts about a reality that is still raw (original) and unprocessed.
3. Haer Talib; is a set of data to explain the fact that no other event or fact.
4. Arikunto; according to the data is all the facts and figures that can be used as material to construct information.

5. Kris; explains the data is a fact about the object to reduce the degree of uncertainty about a situation or event.
6. Supriyanto & Ahmad Muhsin; suggest the data is the raw material of the information or symbols that represent quantities, facts, actions, objects, and so forth.
7. Lia Kuswayatno; explains the data as an event that actually happened in real life.

C. Methodology

The method will be used in training and mentoring the use of SPSS for data processing teacher research is as follows. (1) lectured and asked questions about the steps in the analysis of data in SPSS, (2) Focused Group Discussion on measures in the analysis of data in SPSS, (3) guidance and simulation of any steps in analyzing data on SPSS application, (4) the practice of direct use of each of the steps in the analysis of data in SPSS, (5) the provision of duty-related research data analysis using SPSS application.

The procedure of activities in the training and guidance of the use of SPSS for data processing research are as follows. (1) the general approach, (2) the determination of the participants in the training and guidance of the use of SPSS for data processing for teachers' research, (3) the type, data collection procedures, and (4) scale activities.

1. General approach

This activity is a training / workshop, which aims to provide the knowledge, understanding and skills to participants / partners through (1) a lecture and asked questions about the steps in the analysis of data in SPSS, (2) Focused Group discussion on measures in the analysis of the data in SPSS, (3) guidance and simulation of any steps in analyzing the data in SPSS, (4) the practice of direct use of each of the steps in the analysis of data in SPSS, (5) the provision of duty-related research data analysis using SPSS application.

2. Determination of the Participants

Determination of trainees and the guidance of the use of SPSS for processing research data were conducted by purposive sampling method. According Sugiyono (2012: 126) purposive sampling technique with particular consideration, then this service directly appoint two junior high schools at Kecamatan Tanggetada by various considerations, type, and procedure.

3. Data Collection

Primary data in this study was data taken from observations and in-depth interviews of 20 junior high school teachers.

4. Event Scale

These social service activities cover all teachers of junior high school at Kecamatan Tanggetada selected.

D. Finding and Discussion

Science and technology program for the Society entitled "Training and Guidance Using SPSS for Research Data Processing Applications for Junior School Teachers at Kecamatan Tanggetada Kolaka Southeast Sulawesi province" has been going well. The training was attended by 24 teachers in July 2015. The results obtained are:

Participants have been able to:

- a) understand some types of research data,
- b) understand the analysis used any kind of data and research issues,
- c) using SPSS v.20 applications to analyze the data of a study.

The stages of training and mentoring the use of SPSS includes the step; (A) the preparation, dissemination to the SMP, (b) training and guidance for the application of the use of research data processing, (c) the direct practice of use of each of the steps in the data analysis in SPSS.

a. Preparation phase

This social service activity was conducted in January-February 2015. This activity aimed to promote of activities other than devotion to implementing unit training and mentoring activities at Kecamatan Tanggetada and also aimed to explore the needs of teachers at Kecamatan Tanggetada. The stages of preparation in training and mentoring the use of SPSS for data processing research junior high school teachers at Kecamatan Tanggetada Southeast Sulawesi Kolaka. The activities included the following steps.

1) Choosing the learning materials to be covered

Selection of material was done to adjust the needs of teachers. This was done, because research analysis study was so comprehensive, so things were needed and easily understood by teachers can be implemented effectively

2) Determining the statistical analysis

After the selection of training materials, subsequently determine the analysis that will be used and discussed using SPSS application. One example of a comparison tests on average, according to Sujarweni (2015: 97) comparative test sample average free using two independent samples t test. Likewise with correlation and regression will be explained on the steps of this training guidance. This is done in order to be trained to work well with measures of statistical analysis that has been determined.

3) Arranging work instructions for SPSS

After the determination of the material and analysis based on some literature that will be used in training then prepared a manual labor statistical analysis using SPSS. This was done to facilitate the participants in following the guidance process with various measures analysis of SPSS applications.

4) Dividing groups

The group division was made to facilitate the coach at the time of delivery of materials and the provision of training, so that participants can become more capable tutor for the participant group. It was, in accordance with the opinion of Hartono (2013: 101) learning mutual cooperation (Cooperative Learning) is a form of teaching that divides several groups that cooperate with one another to solve the students' problems.

b. Training and guidance for the use of SPSS for data processing research

The stages of training in the training and guidance of the use of SPSS for data processing research junior high school teachers at Kecamatan Tanggetada, Kolaka Southeast Sulawesi Province includes the following activities; (1) identifying research data, (2) make research data, (3) determining the data analysis, (4) guide and train to operate SPSS. Description of each stage of the exercise is as follows.

1) Getting to Know the Research Data

This section, the first participants were introduced to various types of data. This was done so that teachers know the type of data to be processed and then be able to determine the type of precise analysis if the data type is already known.

a. Data by Source

Data were divided into two by the source, is as follows:

1. Primary data is data obtained or collected by researchers directly from the data source. Primary data is also known as the original data or new data that has properties up to date. In order to obtain primary data, researchers must collect it directly. The technique can be used researchers to collect primary data observation, interviews, discussions focused (focus group discussion - FGD) and questionnaires.
2. Secondary data is data obtained or collected researchers from a variety of sources that already exist (researchers as second hand). Secondary data can be obtained from various sources such as the Central Bureau of Statistics (BPS), books, reports, journals, and others.

Understanding these two types of data above are needed as a basis in determining the techniques and steps of research data collection.

b. Nature-Based data

Data based on the form and its nature then it can be divided into two types of qualitative data (in the form of words/phrases). The qualitative data was obtained through a variety of data collection techniques e.g. interviews, document analysis, focus group discussions, or observations that have been outlined in court records (transcripts). Another form of qualitative data is obtained through shooting pictures or video footage. Quantitative data can be grouped based on the way to get that data is discrete and continuum of data. By its nature, the quantitative data consists of data is nominal, ordinal data, the data interval and ratio data.

c. Data Completely

Riduwan (2010: 81) based on the level of measurement used, quantitative data can be classified into four types (levels) which have different properties, namely nominal, ordinal, interval and ratio. The following explanation:

1. Nominal data or often referred to as category data is data obtained by grouping objects based on specific categories. Examples of nominal data, among others: Gender consisting of two categories:

(1) Men

(2) Women

Figures (1) for males and figure (2) for women is only a symbol that is used to distinguish between the two categories of sex.

2. Ordinal data is the data that comes from an object or a category that has been prepared in stages according to the size. Each has a certain level ordinal data that can be ordered from lowest to highest or vice versa. Examples of ordinal data types include: The level of education is structured in the following order:
 - (1) Kindergarten (TK)
 - (2) Elementary School (SD)
 - (3) Junior High School (SMP)
 - (4) High School (SMA)
 - (5) Diploma
 - (6) Degree
3. Interval Data is the measurement data that can be sorted on the basis of certain criteria and show all the properties owned by ordinal data. Examples of interval data, among others:
 - 1) intellectual Intelligence expressed in IQ. IQ range of 100 to 110 have the same distance to 110 to 120. However, not otherwise people who have IQ 150 intelligence level 1.5 times of one who has an IQ of 100.
 - 2) Based on the strong assumption, learning achievement test scores (e.g. GPA student and student test results) can be regarded as interval data.
4. Ratio data is the data that collects all the properties owned by the nominal data, ordinal data and interval data. Ratio data is data that shaped figure in the real sense because it is equipped with the absolute zero point (absolute) so that the applicability of all forms of mathematical operations (+, -, x,:). examples of the types of data the ratio, among others:

The length of an object that is expressed in the size of the meter is the ratio data. The object of length 1 meter differs significantly with body length of 2 meters so that it can be made a category objects that are 1 meter and 2 meter (nominal data properties). Length of objects can be ordered from longest to shortest (ordinal data properties). The difference between the object of length 1 meter by 2 meters at a distance equal to the difference between objects that length of 2 meters by 3 (the nature of interval data). Excess properties owned ratio data is indicated by the two things: (1) The number 0 meter indicates absolute value, which means that none of the measure; and (2) The object of 2 meters in length, 2 times longer than the body length of 1 meter which indicates the enactment of all the mathematical operations. Secondly it is not applicable to the type of nominal data, ordinal data, or interval data.

1) Making research data

The researches data are often used in educational research concerning with learning outcomes that are manifold interval data and the data is processed using parametric statistics. These section was enthusiastic for teachers to make research data by taking the values of student learning outcomes in class.

2) Determine the data analysis

Analysis of the data was discussed in community service that was descriptive statistical analysis and inferential statistics. Data analysis for descriptive statistics in the form of centralizing data analysis consisted of mean, median, mode, standard deviation, variance, etc. were processed using SPSS. Data analysis consisted of inferential statistical test of one sample t test, paired sample t test, independent sample t test, ANOVA, further different test, correlation, and regression.

3) Guiding and trained to operate SPSS

At this stage the data that has been created and specified analysis will subsequently analyzed using SPSS v.20 later, the results of SPSS will be analyzed according to the data in the input. Training measures data processing using SPSS v.20 described fully in the work manual analysis of SPSS as one outcome in this devotion.

E. Conclusion

Stages of training and guidance include the following: (1) identifying research data, (2) make research data, (3) determining the data analysis, (4) guide and train to operate SPSS. Based on that stage participants have been able to:

- a. understanding some of the types of research data,
- b. understanding the analysis used any kind of data and research issues, and
- c. using SPSS v.20 applications to analyze the data of a study.

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