

Easy Econometrics by Student Worksheet

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ARTICLE INFO

Article History:

Received 04.03.2018

Received in revised form

27.04.2018

Accepted

Available online 01.07.2018

ABSTRACT

Students have difficulty in understanding Econometrics. Based on existing problems, needed a learning materials in the form of Worksheets based on Practice which is capable of supporting courses of Econometrics as well as being able to cultivate self-reliance in students. The purpose of this study is to describe (1) development of student activity sheets on teaching Econometrics, (2) the feasibility of the development of student activity sheets based on teaching Econometrics, (3) student learning outcomes after using Student worksheets based on practical Econometrics, and (4) the response of the students of Student-based teaching worksheets Econometrics. This research uses a type of research development by using 4 d approach (Four-D models). The products of this activity are embodied in materials in the form of worksheets students practical work-based, where in each of the basic skills that exist within the courses of Econometrics will be served content material, Practical tutorial with the help data processing software, as well as Practical case studies. Based on the review and validation of content and media expert expert each obtained a score of 31% and 35% with the criteria. Thus the student activity sheet-based practical feasibility in the process of teaching and learning activities.

Keywords:¹

Student Activity Sheet, Teaching Econometric.

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INTRODUCTION

Econometrics is a social science that combines methods of economic theory, mathematics, and statistical inference which applied on the analysis of economic phenomena. Econometrics in the view of a classic sequence modeling methodologies ranging from identifying economic theory, mathematical modeling of theory, theory of Econometrics model, gathering data, the parameters in the Econometrics model, testing hypotheses, conduct forecasting or parameters, using the model for controls or policies (Gujarati & Porter, 2011).

Close to the learning of Econometrics include: describe and analyze the sense of Econometrics; correlation and regression; simple linear regression; multiple linear regression; regression with dummy variables; the regression model assumptions of irregularities panels, classic model; Regression and time series (Ekonomi, 2017).

Problems that are going on right now is the younger generation or students not yet fully understanding about the use and utilization of econometrics in scientific works and everyday life. Therefore, it is necessary to built of learning materials in the form of Student Activity sheets in hopes of learning students have enough understanding about the changes in economic variables around (Sholikhah, Nikmah, & Prakoso, 2018).

Learning media is an important element in teaching and learning process. Through instructional media, lecturers will be easier in implementing learning and students will be more helpful and easy in learning. Learning media can be made in various forms according to the needs and characteristics of teaching materials to be presented. The purpose of the learning media is to generate motivation and interest of students, to help students in improving understanding, to present data with interesting and reliable, facilitate in interpretation of data, and compact information (Arsyad, 2015).

Student activity sheet is a students guide which is used to perform inquiry or problem solving. This activity sheet can be a guide to practice cognitive aspects as well as the development of guidelines for the development of all aspects of learning in the form of guide experiments or demonstrations. Student activity sheet contains the activity sheets serve as a guide for students to solve a problem in learning. Student Activity Sheets serve as associate teachers in delivering the concept because teachers who convey the concept will not be directly understood by students (Trianto, 2011).

Yet the availability of learning materials in the form of the book Practical support the Econometric courses, make students having difficulty in understanding the science of Econometrics. Students only get

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Science Teaching activities as well as Econometrics which is only limited to the tutorials given by the lecturer. So, this phenomenon makes the student does not have good self-reliance in solving cases. Based on existing problems, then needed a learning materials in the form of Student-based Teaching Worksheets that are capable of supporting courses of Econometrics as well as being able to cultivate self-reliance in students

Econometrics is the science of problems solving on data-based economics. studying Econometrics aided with the use of computer software. So in the process of the courses of econometrics, in addition on studying the content of the material, students are required to manipulate data by using the help of computer software (Eviews). Thus, the indispensable guide to the learning materials in the form of Worksheets students based Teaching Econometrics courses which include five Practical materials. These materials are necessary to give the availability of learning materials which haven't received by learners in learning and developing skills in the science of Econometrics.

Problem Formulation based on the above, the purpose of the research in this activity are as follows:

(1) Describe the feasibility of development of Student Worksheet based on Practical courses of Econometrics., (2) Describe the learning outcomes of students using Student Worksheet based on Practical courses, and (3) Describe the response of students on Student Worksheet based on Practical courses.

METHOD

Student activity sheet development model in this study using 4D model development by Thiagarajan (Trianto, 2011) that consists of a definition phase (define), stage of design (design), stage of development (develop), and stage of deployment (desseminate). The technique of data collection can be done via engineering documentation, and questionnaires. The definition is done through a needs analysis is required before designing research development include the analysis of curriculum, learner analysis, task analysis, the analysis of the concept, and the analysis of the learning objectives. The design of Student Activity Sheets based on courses Teaching Econometrics include the selection of materials, the initial design, and preparation of learning materials. The stage of development In this stage of the process done the preparation of Student activity sheet and validate validation process (Student activity sheet) based on Econometrics courses Teaching.

Material

The instrument of data collection is done by giving the question form and questionnaire which is divided on: 1) Student activity sheet validation, 2) Sheet material validation, 3) student response Sheet, and 4) Post test.

Data Analyses

Analysis of the results of the validation of the feasibility of media in review of material as well as media using likert scale calculation. The criteria are Very good (5), Good(4), enough (3), Bad (2), and very bad (1). After getting a percentage of the eligibility criteria then it can specify the eligibility criteria in the media with the following table: very not worth it (0%-20%), Not worth it (21%-40%), Pretty Decent (41%-60%), Worthy (61%-80%), and Very decent (81%-100%).

Data obtained from the question form or questionnaire were analyzed with simple quantitative technique by calculating presentation answers each question items. Quantitative data in the form of unstructured data (verbal data) used after selected according to your needs. The formula used is $P = \frac{x}{xi} \times 100\%$. Analysis of the Post test (case studies) are used to support the eligibility of the student activity sheet materials-based practical work, the results of which can be combined with the applicable class at minimal score is 56 or C criteria.

FINDINGS

Student activity sheet Instrument contained (1) Language Feasibility with communicative criteria, (2) the feasibility of graphics with the criteria of the size of teaching materials with the design criteria of teaching materials cover, the content design of the teaching materials, (3) the feasibility of the content with the criteria of conformity of the material description with the Semester Learning Plan (RPS), the presentation

feasibility, the presentation technique, the presentation of learning, the presentation tools. The study sheet uses five answer options based on the Likert scale from score 1 to 5 with comments and suggestions.

The results of the material review provided by the material expert include the conformity aspects of the material description with the Semester Learning Plan (RPS) should be further elaborated with a clear flow and in the presentation aspect, the picture should be equipped with focus instructions. Overall development of Activity-based Student Activity Sheets in Econometrics courses is in the appropriate category based on the study of material experts. Furthermore, the suggestions given by the media expert include colors used in less bright media, less detailed materials used, images on the media added and using tabs to adjust spaces. After the review of media experts and material experts, researchers have improved the media in accordance with the suggestion. Based on the results of a validation expert material obtained a score of 31%, based on the results of validation experts the media obtained a score of 35%.

Student Activity Sheet in Econometrics course contains several components that contain instruction manual, learning result indicator, material, and example of case study exercise and software tutorial. Based on the results of the assessment of student learning through Student activity sheet Econometrics obtained score average grade of 82.4. Thus, the overall student learning outcomes have reached the minimal score of 56.

Questionnaire responses given to the students include four (4) Aspects of display aspects, aspects of material presentation, and benefits aspects. Aspects of the display with 6 items of statement covering aspects of text and presentation of the picture, aspects of presentation of the material with 11 items statement covering the concept aspects that accompanied the illustration of the problem in the Student Activity Sheet, examples of questions in the Student Activity Sheet, the language used in the Student Activity Sheet , term materials and terms used in the Student Activity Sheet and benefits aspect with 6 items of statement that include students' understanding, convenience, and interest in the materials and practice questions contained in the Student Activity Sheet. Thus the total gain of the statement filled with the student is 23 points statement.

Based on the results of the analysis of the use of student response Worksheet of student-based Teaching Econometrics courses on aspects of display obtained score average of 92%, on presentation of the material aspects of the obtained score average of 85%, and on the benefits obtained a score of 85% average. Therefore, Student Activity Sheets based on the course Econometrics are worthy of use in the teaching and learning process.

RESULT, DISCUSSION, AND SUGGESTIONS

Development of students practical work-based activity sheet on Econometrics based on expert material and media experts each obtain score 31% and 35% with the criteria. The results of the review of the material that has been given by the experts the material cover the suitability of the description matter with semester learning plans should be more detailed with a clear flow and on the presentation of the image should come with instructions focus. Overall development of student Activity Sheets based on practical Econometrics is at a decent category based on expert examination of the material. Thus, on the basis of expert validation material and media expert, practical-based Student Activity Sheets on Econometrics worthy of use in the process of teaching and learning activities.

Student learning outcomes against the use of Student based Teaching worksheets Econometrics gain score average of 82.4%. score above a minimum score is 56 (C). Things are in line with the theory of Sudjana defines the learning outcomes of students in fact is a change in behavior as a result of learning in the broader sense, covering the areas of cognitive, affective, and psychomotor (Sudjana, 2009).

Based on the results of the analysis of the use of student response Worksheet of student-based Teaching Econometrics courses on aspects of display obtained score average of 92% i.e. student stated strongly agree aspects of the display found in the Student activity sheet based Teaching Econometrics, next on the presentation of the material aspects of the obtained score average of 85% means students agree on aspects of the presentation of the Student activity sheet Econometrics based practical work and on benefits obtained score average 85% means students agree against aspects of the benefits found in the Student activity sheet Econometrics berbasais Practical criteria agreed.

Now the response that has been filled in by the student also carries the comment column. Most of the comment column that has filled the students stated that they were interested in using the student activity

sheet based Econometrics lab course and they state that the student activity sheet based Econometrics teaching good used in the Econometric study, but still need improvement, namely that the use of computer software programs on Econometrics preferably using EVIEWS i.e. latest 9 version. for previous authors use software EVIEWS 6. As for the use of EVIEWS 9 has more speed in the process of data processing, and for the data input can use SPSS or Excell format while the EVIEWS 6 Excell format only (Mansuri, 2016).

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