

# The Success Determinant of Research-Based Lectures

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## Abstract

The manager was always required to improve the quality of education; for that he needed to choose the success determinant factor of education appeared in the quality of lectures and student results. The problem in this research & development were: 1) how feasible the model of research-based lectures developed, 2) how high the success of lectures by using the model of research-based lectures for students, and 3) what was the determinant factor determining the success of the research-based lectures. The determinant factors were suspected include: the utilization of research finding in lectures, students independent learning, assimilation and application of knowledge and understanding of students. For the second objective of this research, data was collected from 37 college students. Data collection used rating scale consists of 41 items that have been proven their validity and reliability (37 items). Data processed by multiple regression step-wise models aided SPSS version 20. The results showed that the feasibility of research-based lectures model developed was supported by data; the success level of students' lectures participants with this research-based lectures categorized high tend to be very high; There were two models influenced the determinant factors for the success of student learning.

**Key Words:** Research Based Teaching (RBT), Assimilation, Application of science, Elaboration, Lecturers' research.

## INTRODUCTION

The era of globalization currently has extraordinary impact in every joint of human life in the world. There is no country in this world which is free from the effects of globalization, including Indonesia. One opportunity for Indonesia is the challenge of labour market global competition nationally and internationally. The number of workers including unemployment can be allegedly caused by incompatibility of learning outcomes obtained from educational institutions (e.g. universities) with qualification demands (needs) of employment. Unfortunately our university graduates is estimated only 15% of outstanding (Zuhdan, 2013).

It is hope that the universities can adjust so as to produce graduates who have the required learning outcomes in accordance users graduates by the implementation of KKNi (*Kerangka Kualifikasi Nasional Indonesia*) or

Indonesian National Qualifications Framework (Zuhdan, 2013).

In the implementation of KKNi, universities are required to formulate curriculum, referring to KKNi to make minimum learning outcomes. The minimum learning achievement of Bachelor of Education (Tier 1) was formulated as follows, "Being able to apply logical thinking, critical, systematic, and innovative in the context of the development or implementation of science and technology based on the rules, procedures and scientific ethics in order to generate solutions, ideas, design or art criticism. In other words, lectures-based research is very important to be applied in university (Act of Research Minister, Technology and Higher Education of Indonesia Republic Number 44 Year 2015 on National Standards for Higher Education). Unfortunately the model of lectures-based research is still limited, so it needs to be developed to improve the quality of the course with new curriculum. The manager was

always required to improve the quality of education (Latorre-Medina, M. J., & Blanco-Encomienda, F. J. 2013) for that he needed to choose the success determinant factor of education appeared in the quality of lectures and student results.

The problem in this research & development were: 1) how feasible the model of research-based lectures developed, 2) how high the success of lectures by using the model of research-based lectures for students, and 3) what was the determinant factor determining the success of the research-based lectures. The determinant factors were suspected include: the utilization of research finding in lectures, students independent learning, assimilation and application of knowledge and understanding of students.

Research based learning is a learning model that is authentic to the standpoint of problem formulation, problem solving, and communicate the benefits penilitian. Therefore, research based learning is considered as a right to be implemented in a student-centered learning which is learning that meets the standard process characteristics such as the interactive nature, holistic, integrative, scientific, contextual, thematic, effective, collaborative and student-centered. So that this model is very effective to be applied for Research-Based Learning model basically encourage students to be active in acquiring knowledge. With so many activities undertaken by the students, those are expected to increase the activity of students in learning. Therefore, by improving the understanding and interest of students to the lecture then also can push students to improve learning outcomes (Roach M., Blackmore P., Dempster J. In Widyawati, Tri Diah dkk. 2010).

Teaching as one of the tripartite core functions of universities is expected to bring tangible results in form of production of quality graduates. This expected result depends on the extent lecturers engage in sourcing for research and the volumes of new knowledge, techniques, ideas and experiences derived from it and utilized to add value to teaching (*Basil Azubuike Akuegwu. 2015*).

Independent learning is an educational system in which the learner is autonomous, and separated from his teacher by space and time, so the communication is by print, electronic, or other non-human medium; Independent learning as learning in the way we want to learn (Widyastuti, S. N. R., Teopilus, S., & Palupi, M. G., 2014). For some students, independent learning is more their style. Faculty should be aware of those not forming an organic collaboration, because those individuals might need the extra support to make it through the program (Littlefield, C., Taddei, L., & Radosh, M., 2015).

Open/distance Learning constitutes a dynamic process of knowledge creation through levels which create a tension between the incremental or amplifying logic, implying exploration or new assimilation of learning (feed forward), and the reductive logic, involving exploiting or using what has been learned (feedback). Exploration includes characteristics such as investigation, variation, risk, experimentation, flexibility, discovery and innovation. It consists in experimenting with new possibilities, and its results are uncertain, take a long time and are often negative. It is usually associated with learning transfer from the individual sphere to the collective sphere, which in itself constitutes a process of knowledge creation (Real, J. C., Leal, A., & Roldán, J. L., 2006).

The application of knowledge and skills are the context in which knowledge and skills are applied (Simmons, S., 2014). Application is the *use of abstractions in particular and concrete situations* (Lister, R., & Leaney, J., 2003). Understanding is the ability to capture notions, like being able to

disclose a material that is presented in an understandable form, is able to provide interpretation and be able to classify. Understanding is a concept that can be digested or understood by the learner so that he understood what was intended, been able to find a way to express these conceptions, and to explore the possibility of relating (Juandi, D., Si, M., & Kartika Yulianti, S. P., 2010).

One of organizing the contents of the lecture (Degeng, I. Nyoman S., 1997) is the elaboration model in which can provides a framework starting with the contents of the lecture, and then select the contents of the field of study into sections, detailing every part, sorting parts into sub-sections, then detailing each section, and so on until the level of detail specified by objectives of lecture. In this way, the student will always find connections between each sub-section to section, and each section into a broader context. It would produce a better retention so that the learning outcomes will also increase.

## **RESEARCH METHODS**

This research conducted at Elementary School Teacher Education Program, Faculty of Teachers Trainer and Education Universitas Kristen Satya Wacana Salatiga involving 3 LPTK (Educational Istitutions) namely: Universitas Sarjana Wiyata Taman Siswa Daerah Istimewa Yogyakarta, Universitas PGRI Semarang and Universitas Muhammadiyah Surakarta. The study was conducted for six months, starting in February until July 2016.

The research method is a Research Development (RD). This method was chosen to meet the needs of the research that requires development process and collecting data in various aspects. Moreover this method was supporting the implementation process of the development of learning model. The development of this model included modelling, expert testing, empirical test (either in UKSW and in 3 LPTK outside UKSW, refinement of model and the determination of the final product (final model).

The involvement of students in research activities included (1) learning implementation,

(2) learning reflection on limited reflection. In this research, data were collected from 37 college students participating in elementary school learning assesment course.

Data were collected by using student self-assessment scale or students' self-evaluation consisted of 41 items that have been proven that have been proven 37 items are valid (0.192 to 0.700) and reliable (0.925). Data processed by a step-wise multiple regression model aided SPSS version 20.

## **RESULT**

### ***Feasibility Model***

Through the study of theories and models of learning in a variety of references (e.g. books, journals, internet, research finding and good practices), it was designed a draft of Research-Based Learning Model and its research product included a research-based learning tools consisted of: Lesson plans equipped with instructional media, learning materials, and learning assesment as an attachment. This draft of Research-Based Learning Model was then ready to have further tested. Draft of Research-Based Learning Model that has been printed, then it was tested by the expert namely the validity test carried out by learning technology expert, senior lecturer and manager of bachelor degree program at Elementary School Teacher Education Program, Faculty of Teachers Trainer and Education Universitas Muhammadiyah Surakarta. The validators were consisted of 5 persons using instruments that have been prepared. The result mostly assessing feasible and tend to be very feasible.

Based on the revised Model after the validity test by the experts, Research-Based Learning model along with the learning device comprised of semester lesson plans, unit teaching events equipped with lecture materials, media and evaluation, then practiced into the course by three lecturers at Elementary School Teacher Education Program Universitas Kristen Satya Wacana, Salatiga held on the 2nd semester of 2015/2016.

Empirical Test of implementing Research-Based Learning model in the three courses were then carried out at the Elementary School Teacher Education Program Universitas PGRI Semarang. After the model was implemented, and then followed by a focus group discussion attended by 12 students and 7 lecturers.

The result from the focus group discussion showed that overall the model was valuated feasible. However, it still needed to be equipped with a mind mapping to clarify the implementation of this developed model. Besides that structuring and setting of the model should also be performed. This empirical test resulted improvement of research-based learning model based on the results of the limited implementation. Considering the limitations of time and place of the trial extends so that the activity cannot be done. Therefore, the revised after the limited empirical test will be assigned as the final model.

***How high the success of lectures by using the model of research-based lectures for students***

Based on the analysis of research data, the result obtained as followed:

| Variables  | Mean   | Median | Std. Deviation | Variance |
|--|--------|--------|----------------|----------|
| Y The success of RBT                                     | 1,9444 | 2,0000 | ,23570         | ,056     |
| X <sub>1</sub> Research utilization in teaching          | 1,8889 | 2,0000 | ,32338         | ,105     |
| X <sub>2</sub> students independent learning             | 1,9444 | 2,0000 | ,23570         | ,056     |
| X <sub>3</sub> Assimilation and application of knowledge | 1,8889 | 2,0000 | ,32338         | ,105     |
| X <sub>4</sub> Elaboration                               | 1,8889 | 2,0000 | ,32338         | ,105     |

On a scale 0 - 3, data showed that the success of lecturers teaching used Research-Based Learning were at a higher order level, tend to be very high. Likewise the overview of independent variables studied.

***What was the determinant factor determining the success of the research-based teaching***

By performing stepwise regression analysis, the results obtained as shown below.

**Model Summary**

| Model | R                 | R Square | Adjusted R Square | Std. Error of the Estimate |
|-------|-------------------|----------|-------------------|----------------------------|
| 1     | ,809 <sup>a</sup> | ,655     | ,633              | ,14276                     |
| 2     | ,889 <sup>b</sup> | ,791     | ,763              | ,11471                     |

a. Predictors: (Constant), X<sub>3</sub> Assimilation and application of knowledge

b. Predictors: (Constant), X<sub>3</sub> Assimilation and application of knowledge, X<sub>4</sub> Elaboration

Based on the results of the analysis as presented on the table above, it was concluded that X<sub>3</sub> (Assimilation and application of knowledge) be the determinant of Y (The success of RBT) by 63,30% (Model 1), then followed by the X<sub>4</sub> (Elaboration) giving influence on Y(The success of RBT) by 76.30% (model 2). It means that only less than 24% were influenced by other variables which were not observed in this model. The other variables namely: X<sub>1</sub> (Research utilization in teaching) and X<sub>2</sub> (Students independent learning) supported the data did not affect the Y (Quality of Teaching and Learning).

**CONCLUSION AND RECOMMENDATIONS**

The results showed that the feasibility of research-based lectures model developed was supported by the data. The success level of students' lectures participants with this research-based lectures categorized high even tend to be very high. There were two models influenced the determinant factors for the success of students learning namely assimilation and application of knowledge, and elaboration.

Suggestion given for lecturers is to utilize this research-based lectures model in teaching while improving the quality of the lecture and student learning outcomes. For students is to get scientific learning experiences that have an impact in increasing the understanding of

science education for elementary school teachers and higher order thinking skill. For education program study, strengthen the university curriculum policy by implementing the research-based lectures model to improve the graduates competence and to increase the graduates competitiveness by paying attention to assimilation and application of knowledge, and elaboration.

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