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The Effect of Teacher Performance in Implementation of The 2013 Curriculum Toward Chemistry Learning Achievement

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Abstract. This research is a study about implementation of the 2013 Curriculum on Chemistry subject. This study aims to determine the effect of teacher performance toward chemistry learning achievement. The research design involves the independent variable, namely the performance of Chemistry teacher, and the dependent variable that is Chemistry learning achievement which includes the achievement in knowledge and skill domain. The subject of this research are Chemistry teachers and High School students in Bandung City. The research data is obtained from questionnaire about teacher performance assessed by student and Chemistry learning achievement from the students' report. Data were analyzed by using MANOVA test. The result of multivariate significance test shows that there is a significant effect of teacher performance toward Chemistry learning achievement in knowledge and skill domain with medium effect size.

1. Introduction

The educational curriculum in Indonesia has been progressing from time to time. The curriculum is constantly improving for a better Indonesia education until Curriculum 2013 emerges. Curriculum 2013 is raised to address the internal challenges of Indonesian education and also global challenges.

In the term of implementation of the 2013 Curriculum, the teachers have a very important role. The 2013 Curriculum can be implemented well if the teacher has the ability to translate document of the 2013 Curriculum into learning process in classroom. The teachers' understanding of 2013 Curriculum will affect teacher performance in teaching and learning activities. The learning essence of Chemistry should be understood by Chemistry teachers so that the teachers not only transfer knowledge but also demonstrate good performance in instilling values and optimizing students' competency in the domain of knowledge, attitude, and skill.

Curriculum implementation can not be separated with student achievement. This is because student achievement is the result of teaching and learning process which is conducted by teachers. The performance of Chemistry teachers in the course of teaching and learning process will have an impact or effect toward students learning achievement. Meanwhile, student achievement becomes one measure of the success of curriculum implementation.

Due to the importance of curriculum implementation by teachers as well as the students achievement, this research aims to determine the effect of teacher performance in implementation of the 2013 Curriculum toward student learning achievement in Chemistry subject.

2. Conceptual framework

2.1. Teacher performance

Performance or job performance is a universal and multidimensional concept. Many definition of job performance have been proposed by several researchers. Job performance can be define as scalable actions, behaviour and outcomes that employees contribute to organizational goals [1]. In the context of teacher performance, teacher is a proffesional educator which has the main task of educating, teaching, guiding, directing, training, assessing, and evaluating students. Teacher performance also can be described as the duties performed by a teacher at a particular period in the school system in achieving organizational goals [2].

2.2. Implementation of the 2013 Curriculum

The implementation of curriculum means the actualization of written curriculum in the form of learning. The implementation of curriculum is the application of curriculum ideas, concepts or programs into leaning practices by constantly adjusting the field situation and characteristics of students [3]. In term of the 2013 Curriculum, the teacher has to make a planning of curriculum implementation in the form of lesson plan based on syllabus that has been set in the 2013 Curriculum. Then, implementation of the 2013 Curriculum in learning process uses scientific approach and several teaching model such as discovery/inquiry, problem based learning, and project based learning. The learning process and result must be evaluated by using authentic assessment.

2.3. Student achievement

Student achievement can be defined as the status of subject-matter knowledge, understanding, and skills at one point in time [4]. In term of the 2013 Curriculum, student achievement should cover the domain of attitude, knowledge, and skill. However, Chemistry teacher only evaluates the student achievement in the domain of knowledge and skill; while for the student achievement in attitude domain is evaluated by civic teacher and religion teacher.

3. Methodology

The research method is descriptive with quantitative approach. The research design involves the independent variable, namely the performance of Chemistry teacher, and the dependent variable that is Chemistry learning achievement which includes the achievement in knowledge and skill domain. The subject of this research are 7 Chemistry teachers and 255 students from 7 High School in Bandung City. The research data is obtained from students ratings questionnaire about teacher performance in implementation of the 2013 Curriculum that includes aspects of learning planning, implementation of learning, evaluation of learning, and teacher personality; and Chemistry learning achievement from the odd semester report of academic year 2016/2017. Then, data were analyzed with MANOVA test by using SPSS IBM 22.0 Statistic software.

The effect of independent variable towards dependent variable is called effect size. In MANOVA calculations, the effect size can be known from eta squared (η^2). Cohen gives reference to the magnitude of effect size based on the value of eta squared, that is $\eta^2 = 0.01$ for small effect size, $\eta^2 = 0.06$ for medium effect size, and $\eta^2 = 0.14$ for large effect size [5]. However, the result of analysis data using SPSS do not include the value of eta squared, but partial eta squared(η_p^2). The value of both can be different. Yet, if there is one independent variable in the analysis of variance, the value of the eta squared equals to partial eta squared [6].

4. Results and discussion

4.1. Results

The result of multivariate significance test in MANOVA can be seen in Table 1. The value of efffect size in this research can be seen in the result of Pillai's Trace test.

Table 1. Multivariate significance test

Effect		Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
Intercept	Pillai's Trace	0.995	27604.683	2.000	251.000	0.000	0.995
	Wilks' Lambda	0.005	27604.683	2.000	251.000	0.000	0.995
	Hotelling's Trace	219.958	27604.683	2.000	251.000	0.000	0.995
	Roy's Largest Root	219.958	27604.683	2.000	251.000	0.000	0.995
Kinerja	Pillai's Trace	0.122	8.205	4.000	504.000	0.000	0.061
	Wilks' Lambda	0.879	8.329	4.000	502.000	0.000	0.062
	Hotelling's Trace	0.135	8.452	4.000	500.000	0.000	0.063
	Roy's Largest Root	0.119	15.020	2.000	252.000	0.000	0.107

The result of Pillai's Trace test shows that the significancy value is less than 0.05. It means that teacher performance gives a significant effect toward Chemistry learning achievement in the domain of knowledge and skill. The value of effect size can be known from the value of partial eta squared in Pillai's Trace test that is 0.061. Based on Cohen, the value of effect size included in medium category.

4.2. Discussion

The result of MANOVA test shows that there is a significant effect of teacher performance toward Chemistry learning achievement in knowledge and skill domain with medium effect size. It shows the need for teacher performance improvement.

Curriculum implementation is influenced by teachers' belief and school characteristic [7]. The teachers' belief, knowledge, and ability in implementing the curriculum will bring a good performance. The teacher performance in implemetation of the 2013 Curriculum also emphasizes the active engangement from students in the learning process, so that the teacher should be proficient in selecting and applying strategies and learning methods. As Marzano pointed out that the major independent impact on student achievement is instructional strategies [8]. The teachers are fully responsiblefor deciding how to use the resources available to students for advancing students to some extent. The teachers need to assess the instructional needs of each student then align strategies appropriate to their needs.

To achieve maximum student learning achievement, collaborative effort between teachers and students is needed. Teacher performance in learning should be as great and as best as possible. Students should also participate actively in learning to build their own knowledge so that they get good academic achievement.

5. Conclusion

Teacher performance plays a very important role in implemetation of the 2013 Curriculum. Teacher performance in implemetation of the 2013 Curriculum gives a significant effect toward Chemistry learning achivement in knowledge and skill domain. The value of effect size is 0.061 which included in medium effect size. Collaborative effort between teacher and students is needed for the success of curriculum implementation. Some improvement in teacher performance is needed too.

References

[1] Viswesvaran C and Ones D S 2000 *Int. J. Sel. Ass* **8** 216-26
[2] Amin M, Shah R U, Ayaz M and Atta M A 2013 *Gom. Univ. J. Res* **29** 100-4
[3] Hamalik O 2008 *Dasar-Dasar Pengembangan Kurikulum* (Bandung: Remaja Rosdakarya) p 238
[4] National Board For Professional Teaching Standards 2011 *Student Learning, Student*

Achievement:How do Teachers Measure Up? ERIC_ED517573
[5] Fritz C O, Morri P E and Richler J J 2012 *J. Exp. Psy* **141** 2-18
[6] Levine T R and Hullet C R 2002 *Hum. Com. Res* **28** 612-25
[7] Roehrig G H, Kruse R A and Kern A 2007 *J. Res. Sci. Teac* **44** 883-907
[8] Thomas I A and Green R L 2015 *Nat. For. Teac. Edu. J* **25** 1-18